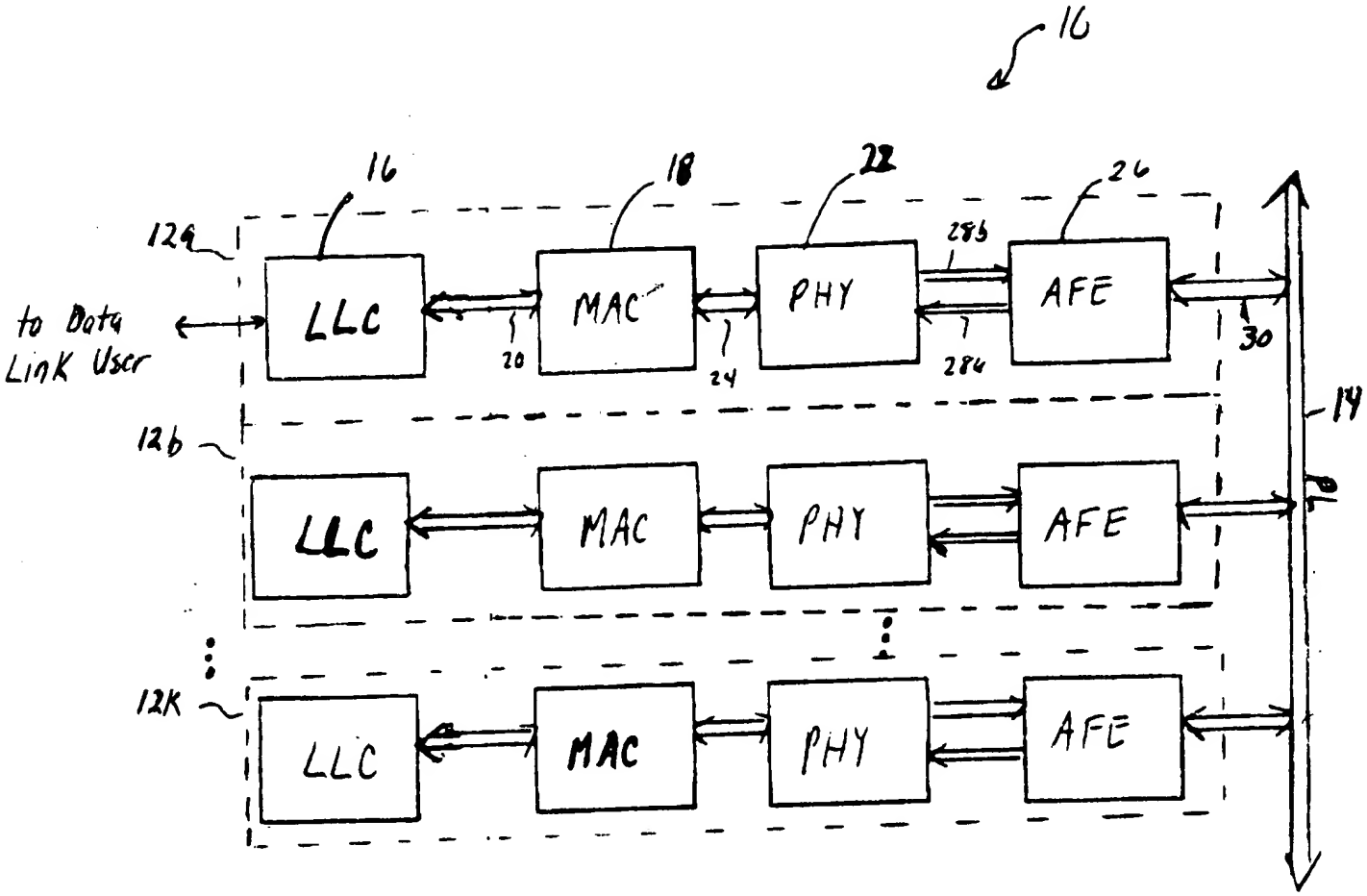


FIG. 1

0040080 - 0936960

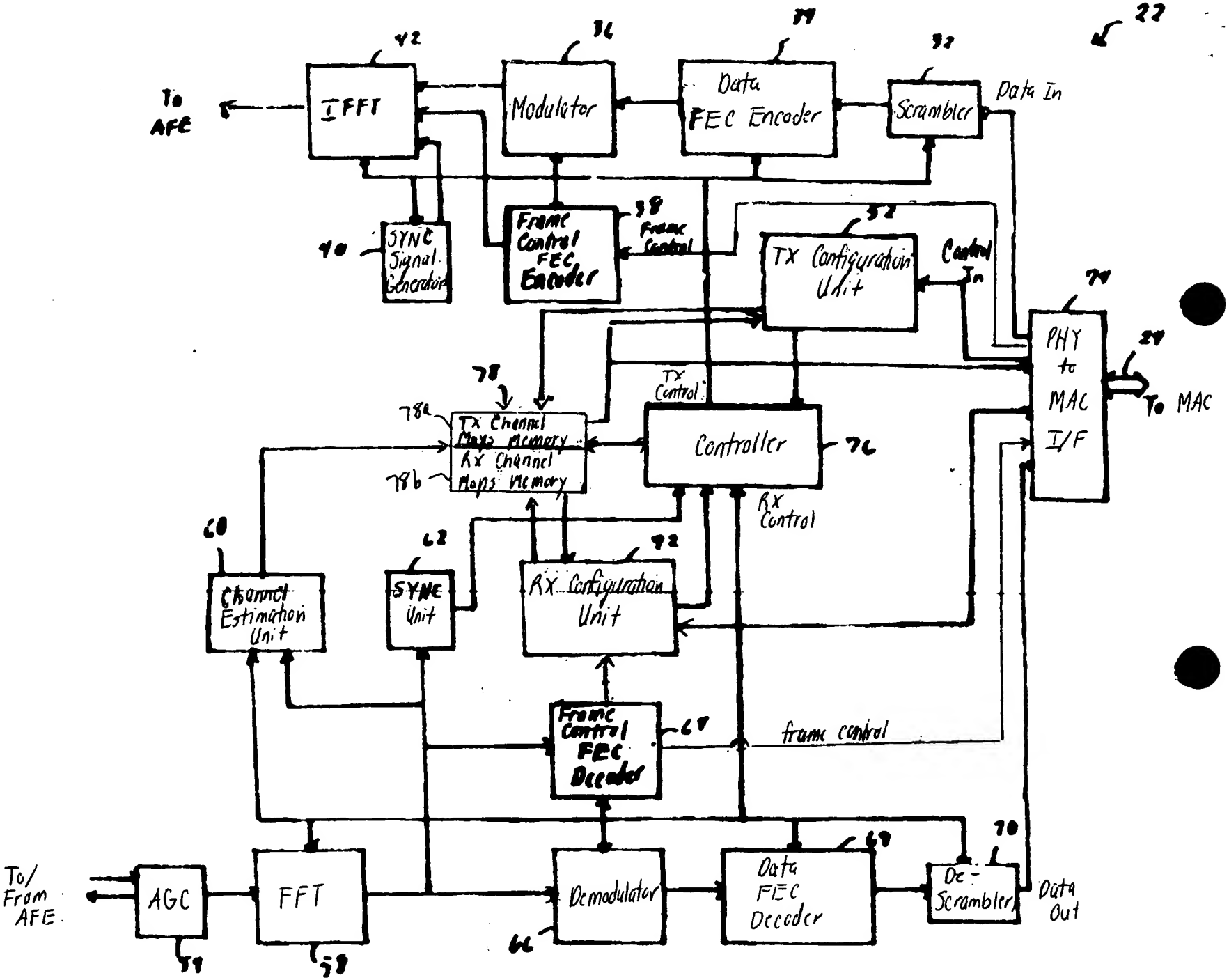

22
42
36
34
32
To AFE
IFFT
Modulator
Data FEC Encoder
Scrambler
Data In
40
SYNC Signal Generator
38
Frame Control FEC Encoder
Frame Control
52
TX Configuration Unit
Control In
74
PHY to MAC I/F
24
To MAC
78
78a
Tx Channel Maps Memory
78b
Rx Channel Maps Memory
TX Control
Controller
76
RX Control
60
Channel Estimation Unit
62
SYNC Unit
72
RX Configuration Unit
67
Frame Control FEC Decoder
frame control
To/ From AFE
AGC
FFT
Demodulator
Data FEC Decoder
De-Scrambler
Data Out
70
66

FIG. 2

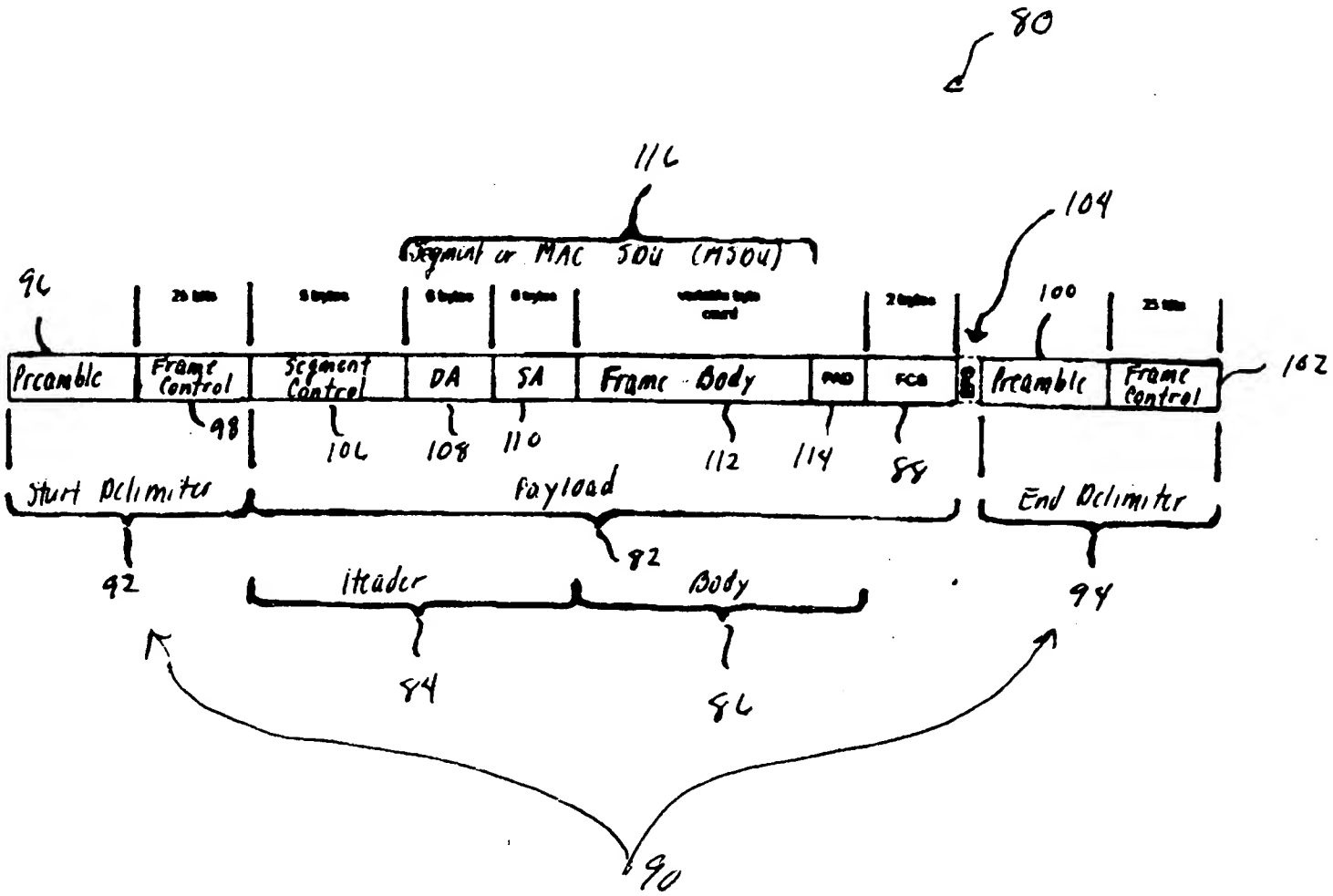

80
116
Segment or MAC SDU (MSDU)
104
96
100
162
Preamble
Frame Control
Segment Control
DA
SA
Frame Body
PAD
FCS
Preamble
Frame Control
98
102
108
110
112
114
88
Start Delimiter
Payload
End Delimiter
92
82
94
Header
Body
84
86
90

FIG. 3

0044080 "6092E960

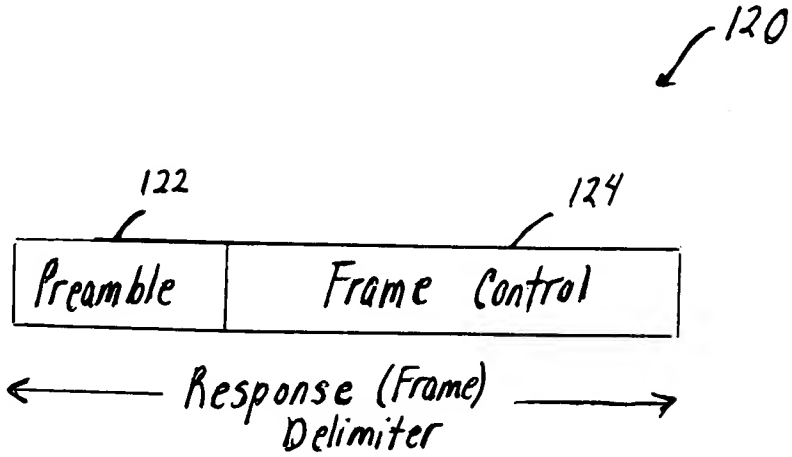


FIG. 4

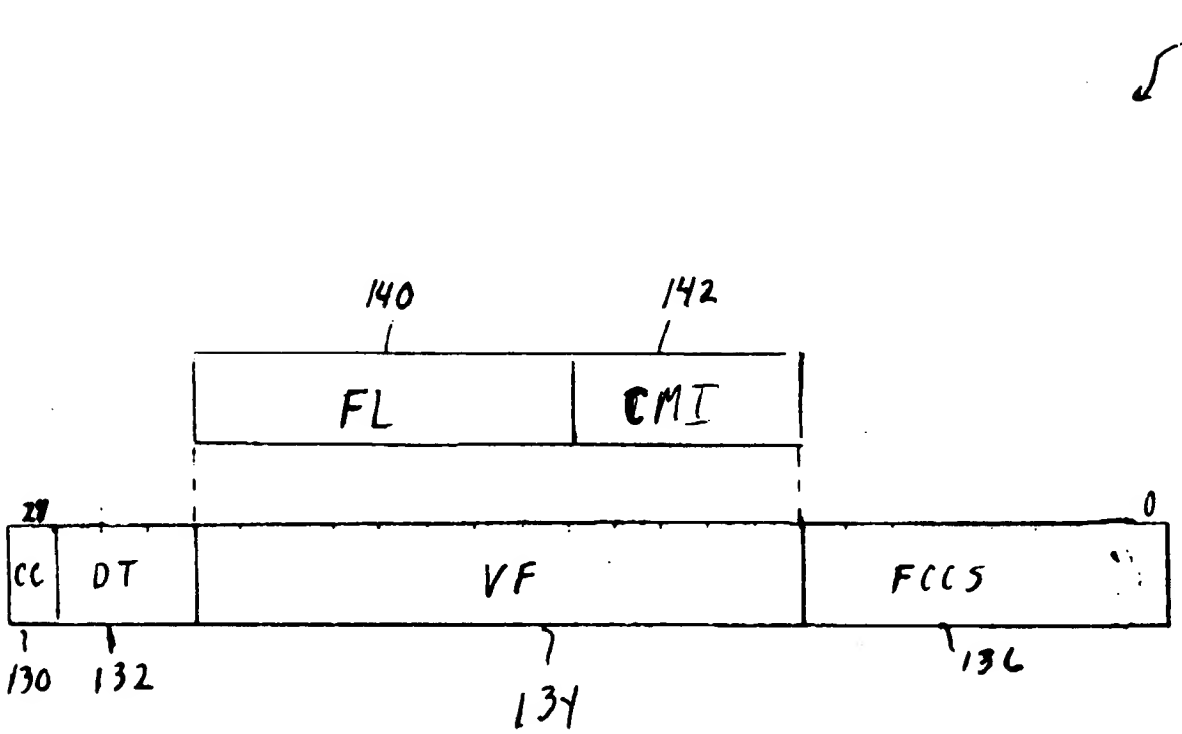


FIG. 5A

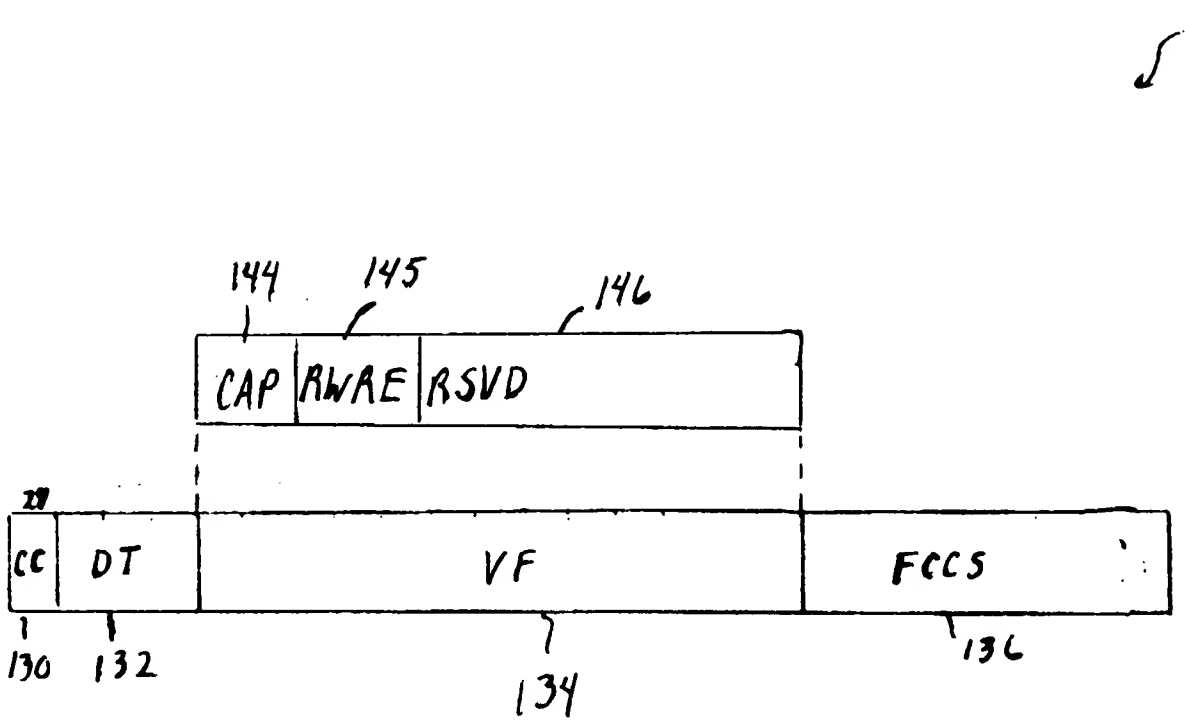


FIG 5B

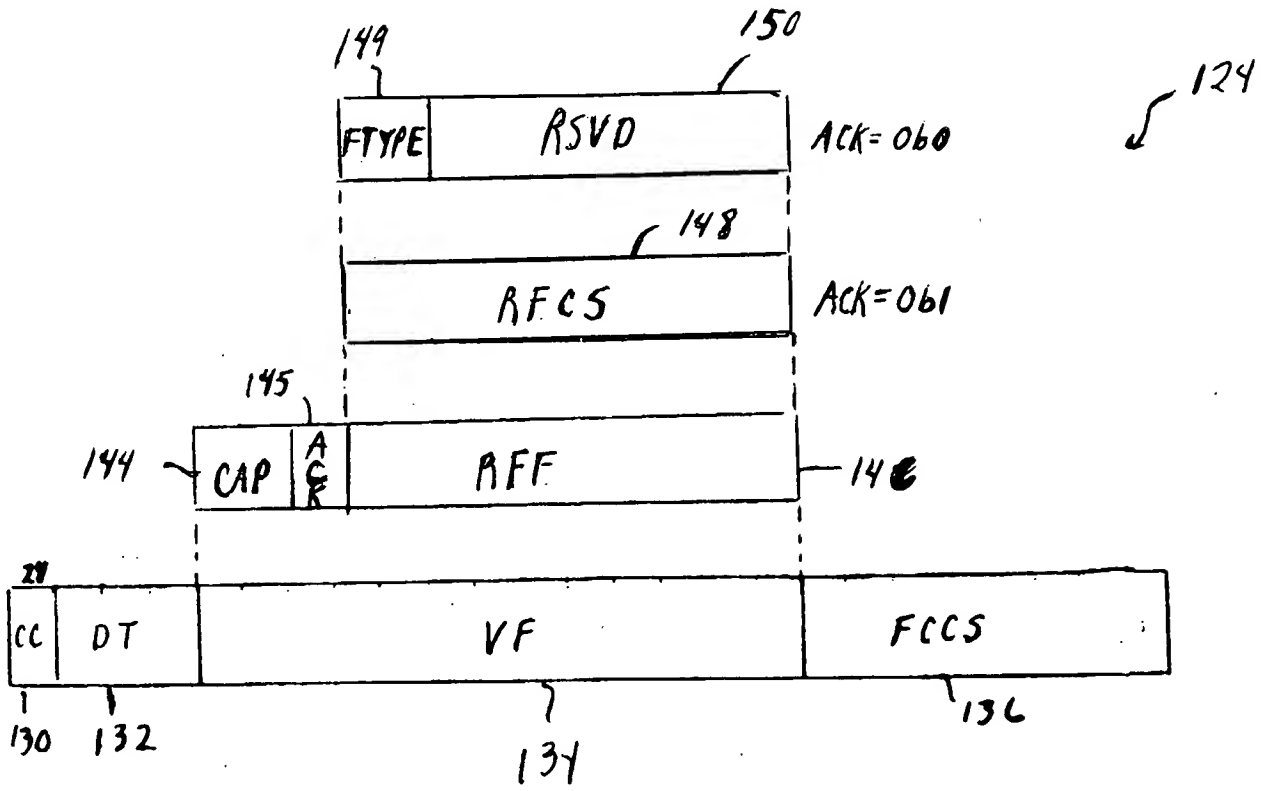

149
150
124
FTYPE
RSVD
ACK=060
148
RFCS
ACK=061
145
144
CAP
ACK
RFF
146
CC
DT
VF
FCCS
130
132
134
136

FIG. 6

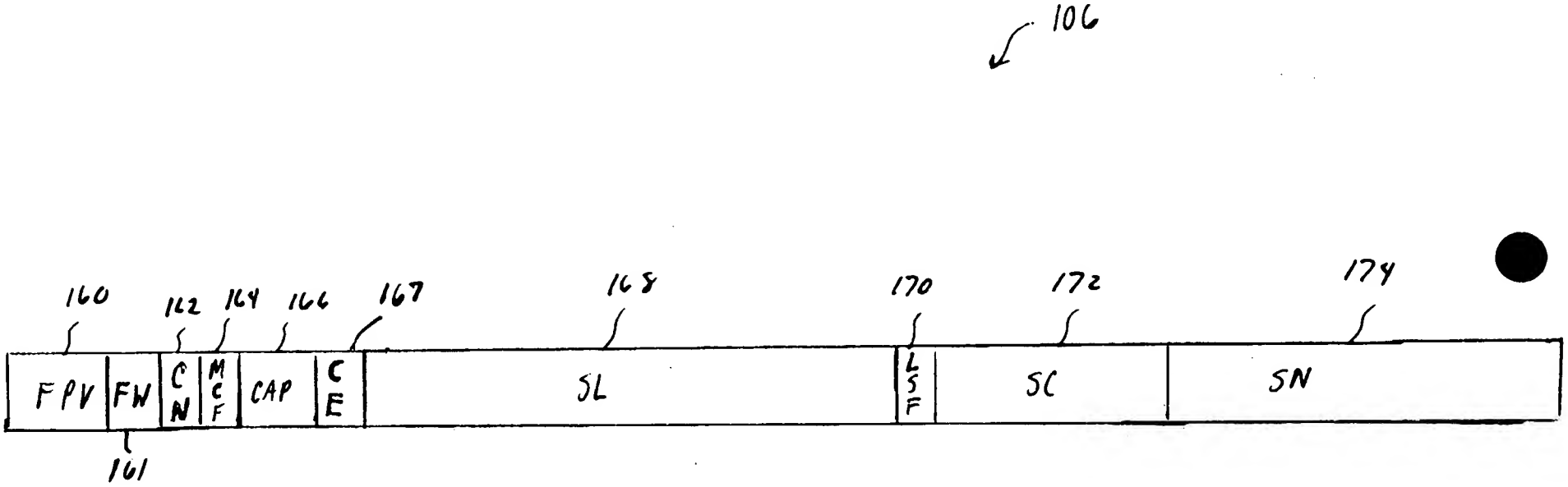

106
160
162
164
166
167
168
170
172
174
FPV
FW
CN
MCF
CAP
CE
SL
LSF
SC
SN
161

FIG. 7

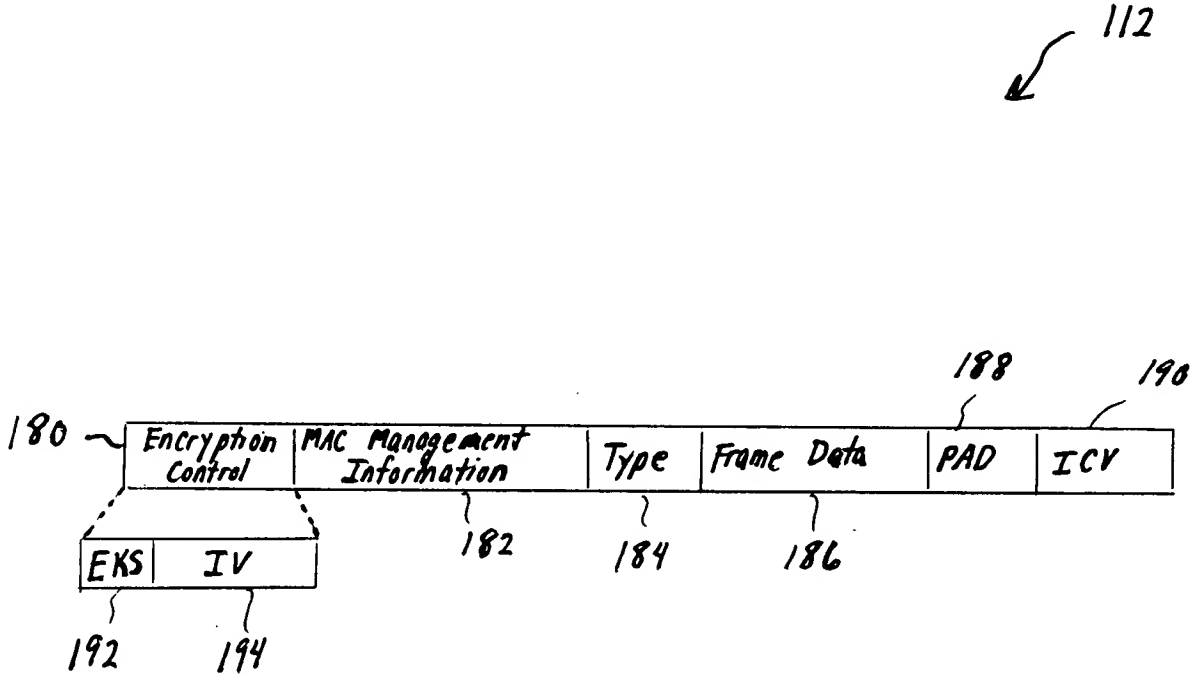

112
188
190
180
Encryption Control
MAC Management Information
Type
Frame Data
PAD
ICV
182
184
186
EKS
IV
192
194

FIG. 8

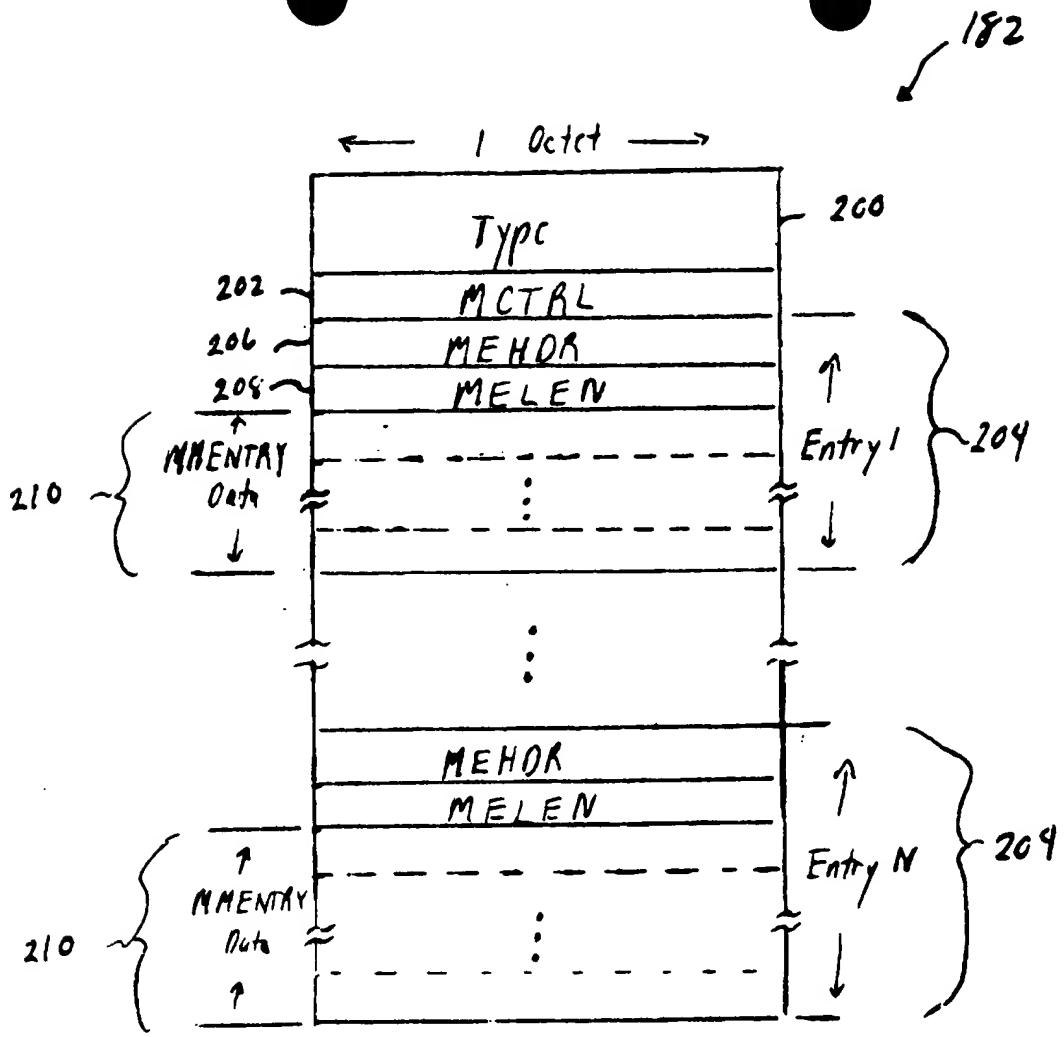

182
1 Octet
Type
200
MCTRL
202
MEHOR
206
MELEN
208
MMENTRY Data
210
Entry 1
204
MEHOR
MELEN
MMENTRY Data
210
Entry N
204

FIG. 9

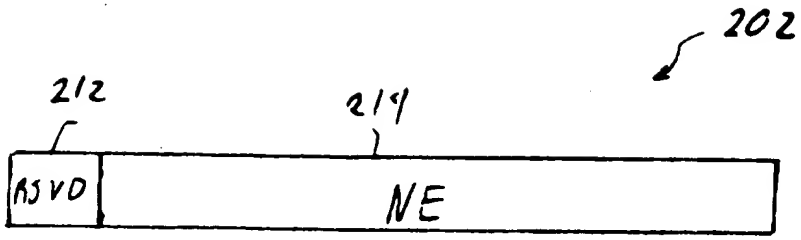


FIG. 10

FIG. 11

0040809.0095250

0004080 "60926960

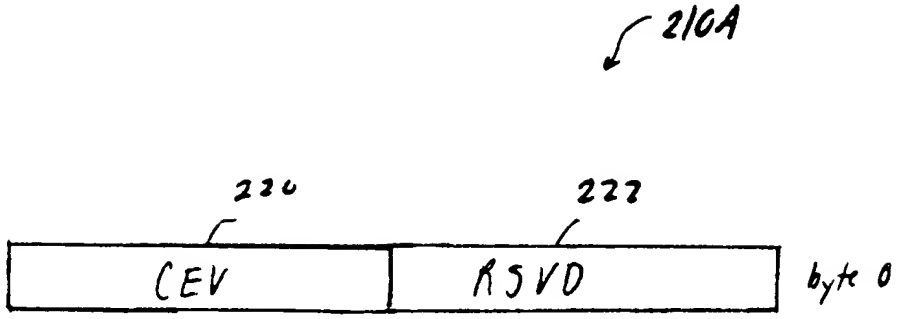


FIG. 12A

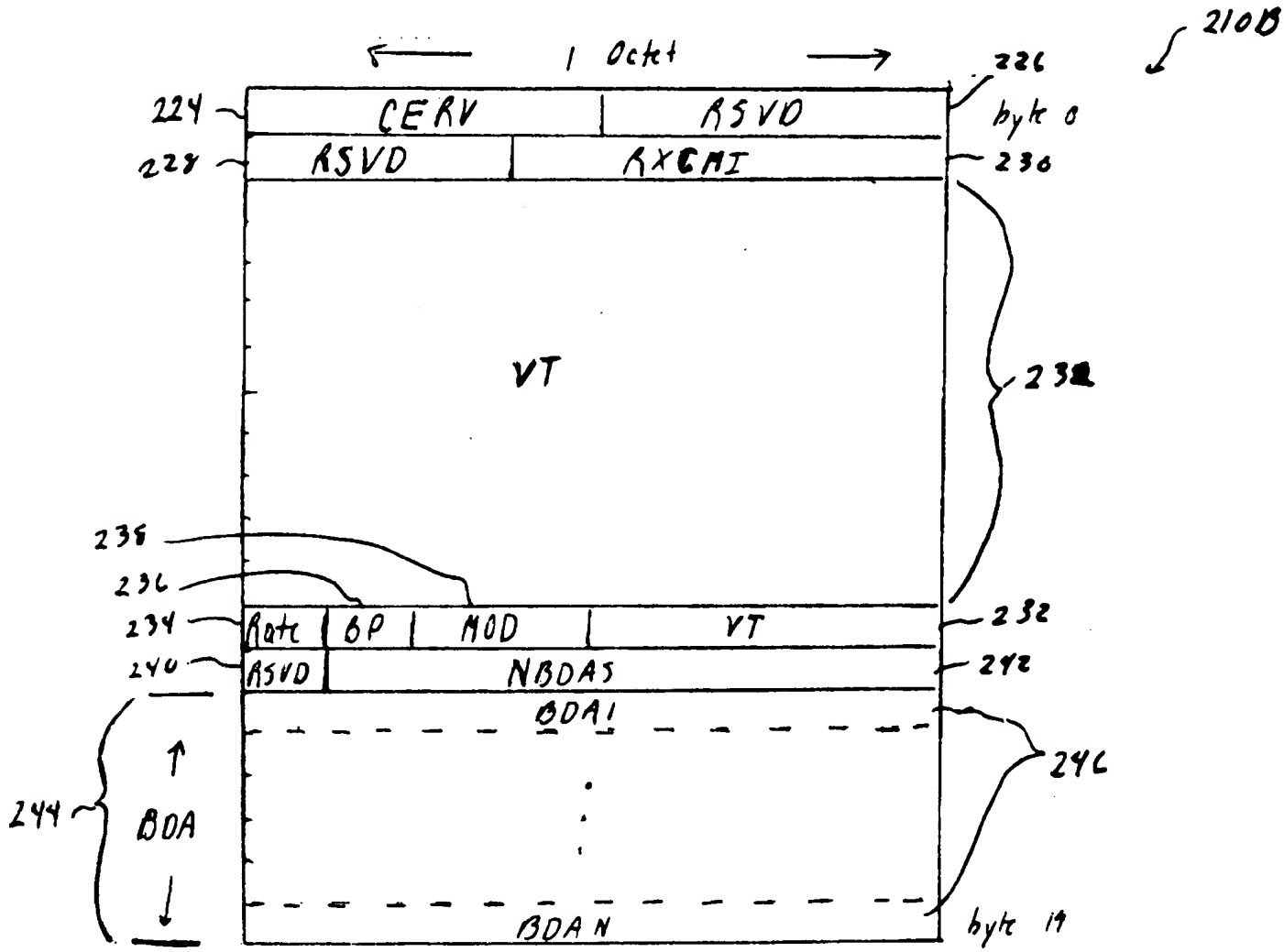


FIG. 12B

0094080 "6094250

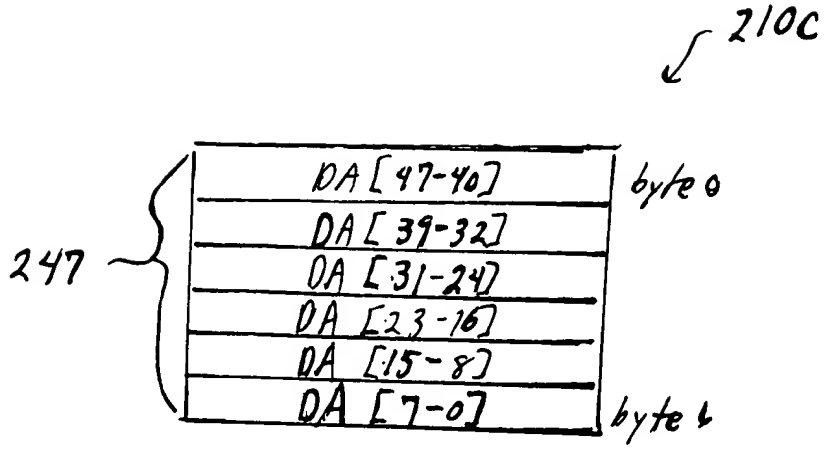


FIG. 13A

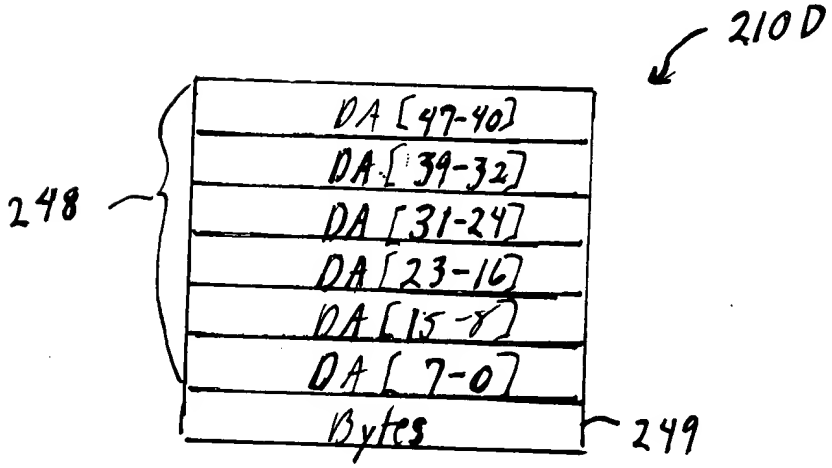


FIG. 13B

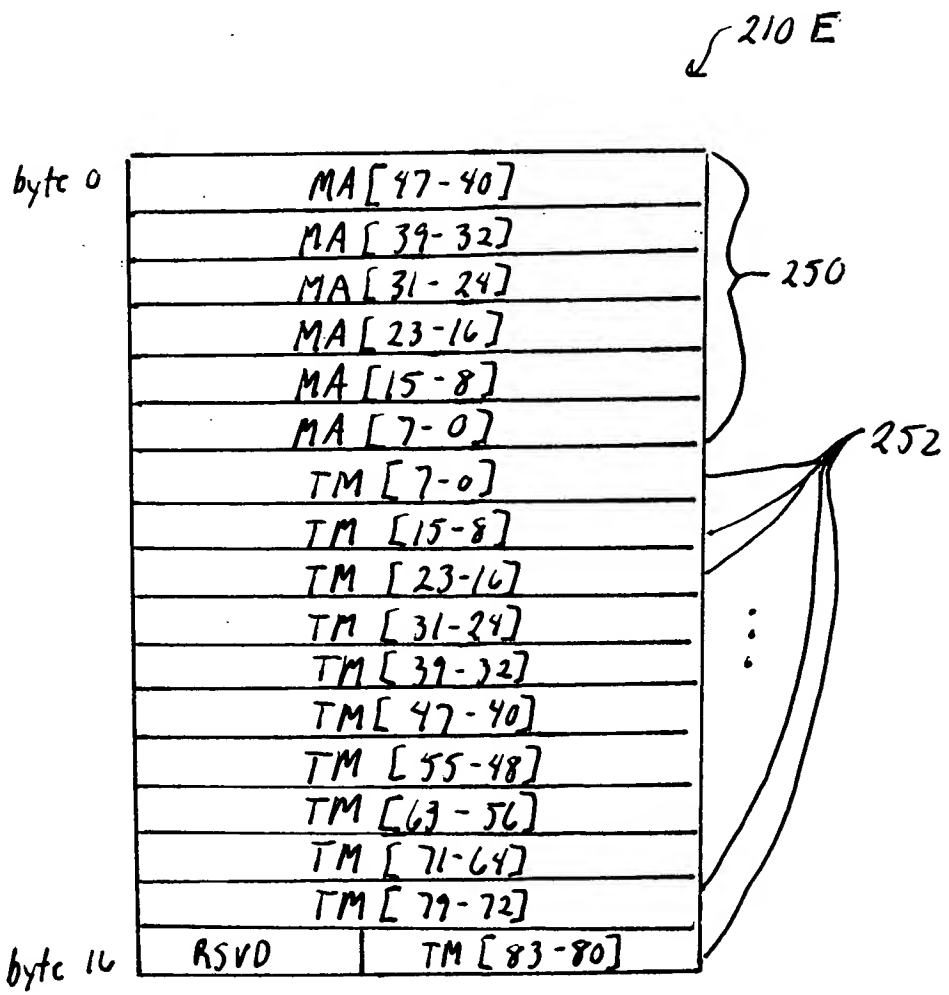

210 E
byte 0
MA [47-40]
MA [39-32]
MA [31-24]
MA [23-16]
MA [15-8]
MA [7-0]
TM [7-0]
TM [15-8]
TM [23-16]
TM [31-24]
TM [39-32]
TM [47-40]
TM [55-48]
TM [63-56]
TM [71-64]
TM [79-72]
byte 16
RSVD
TM [83-80]
250
252

FIG. 14

0040080 - 6092650

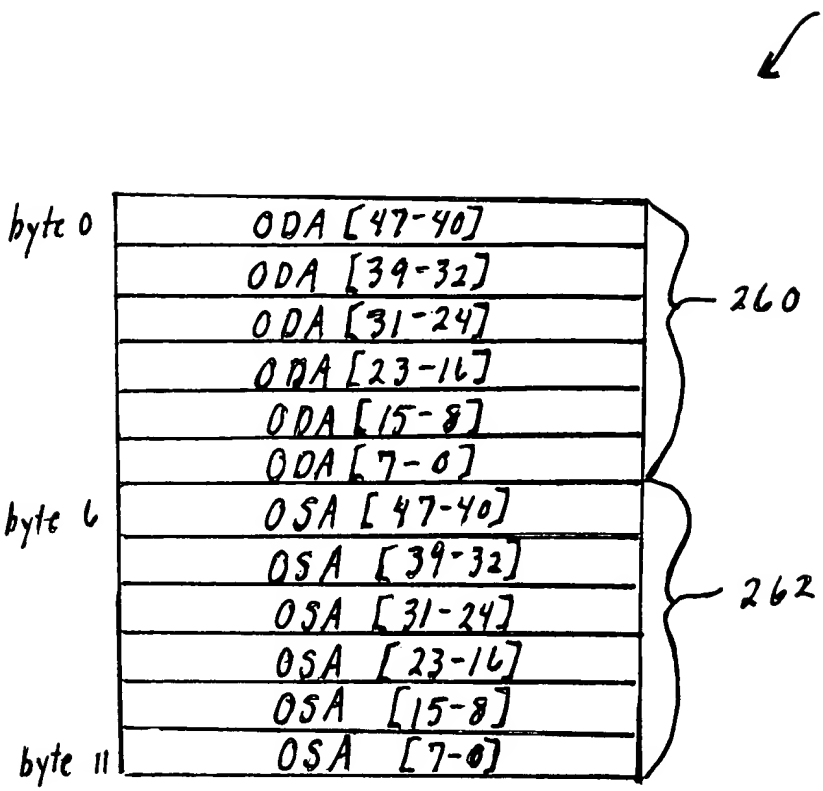


FIG. 15

0040080 09/09/2003 09:36:09

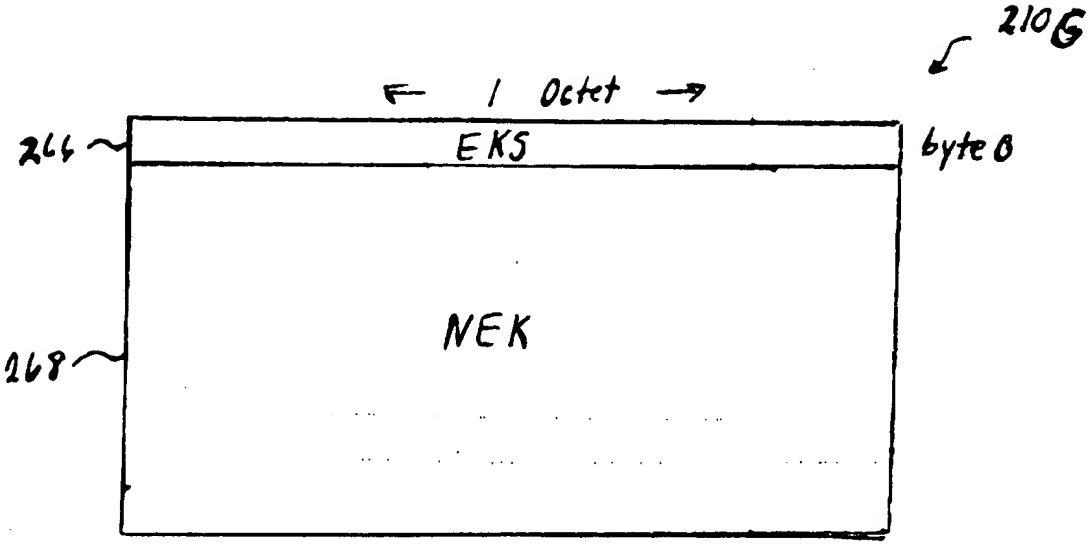


FIG. 16

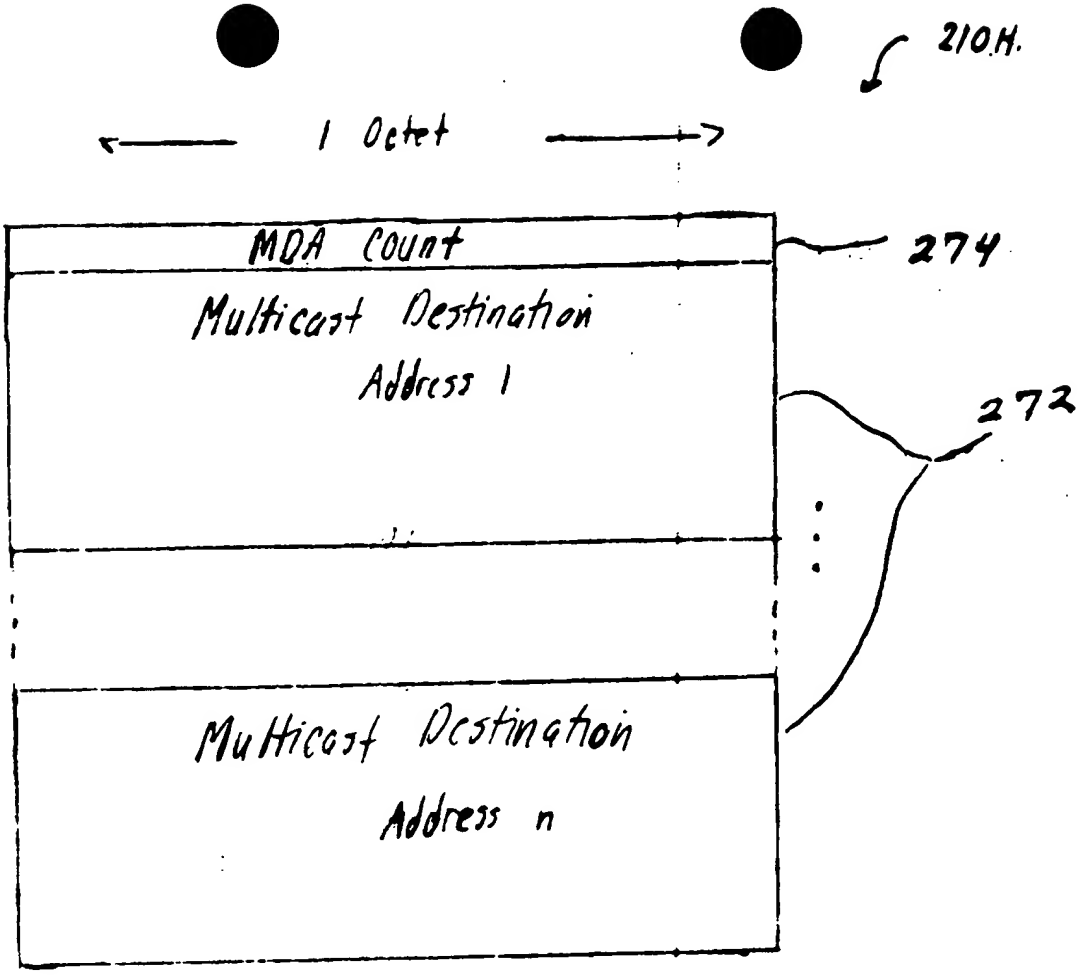


FIG. 17

0040080 - 6092960

0040809 - 6093250

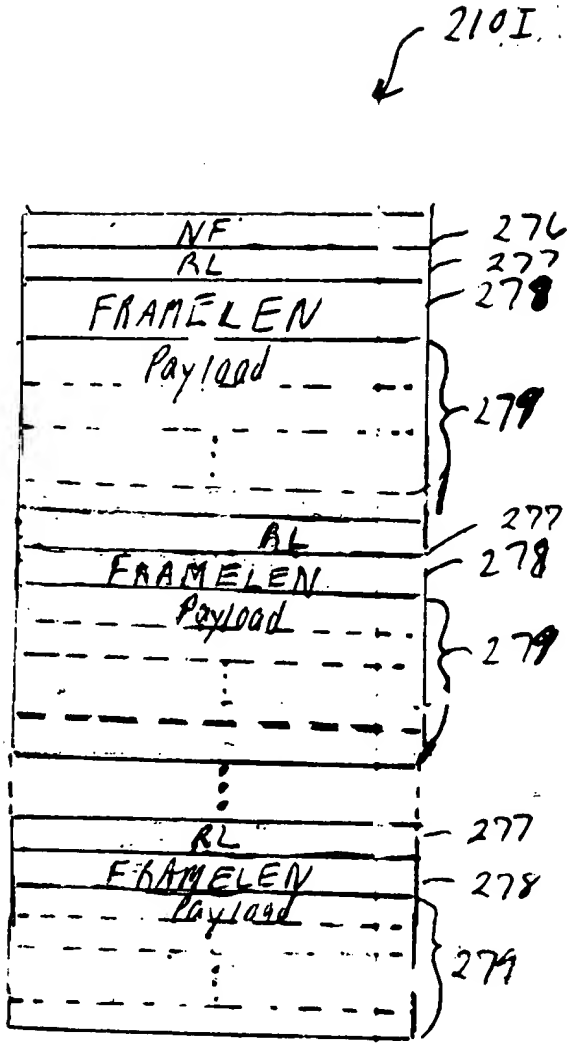


FIG. 18

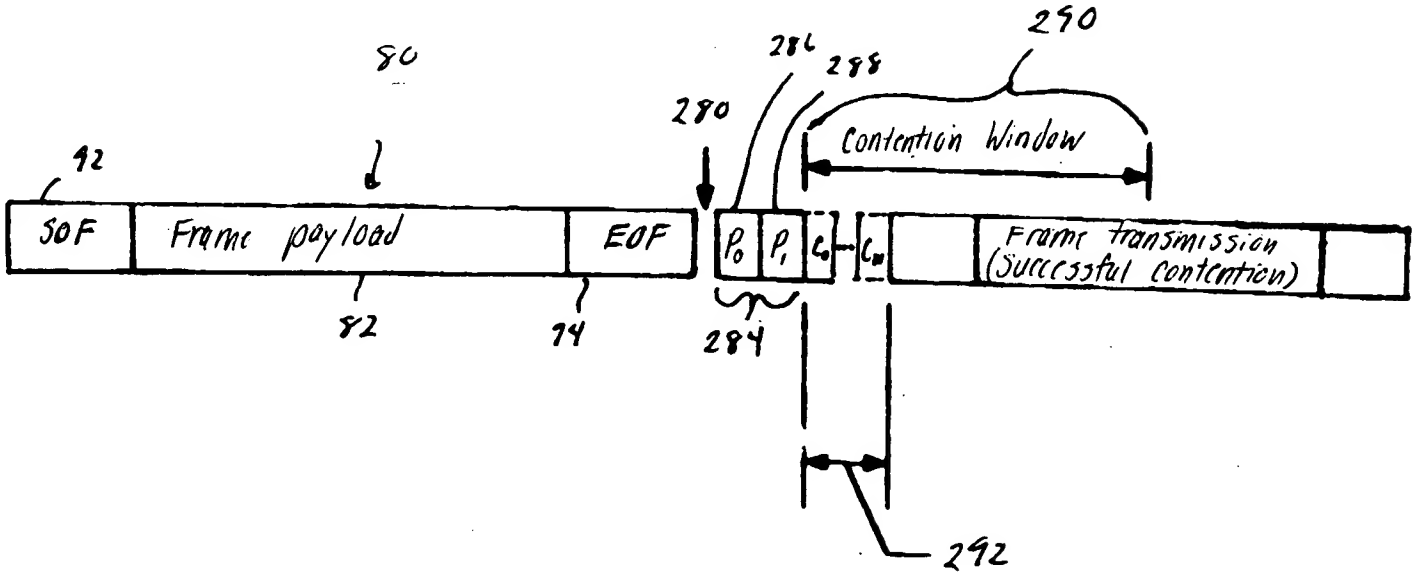


FIG. 19A

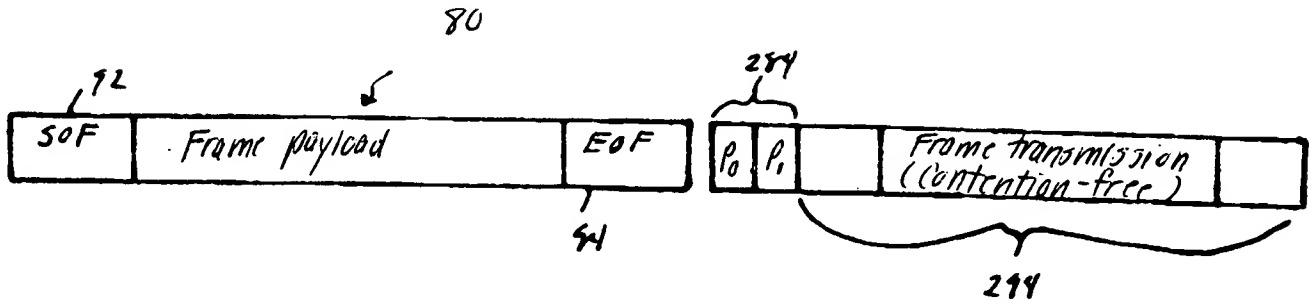


FIG 19B

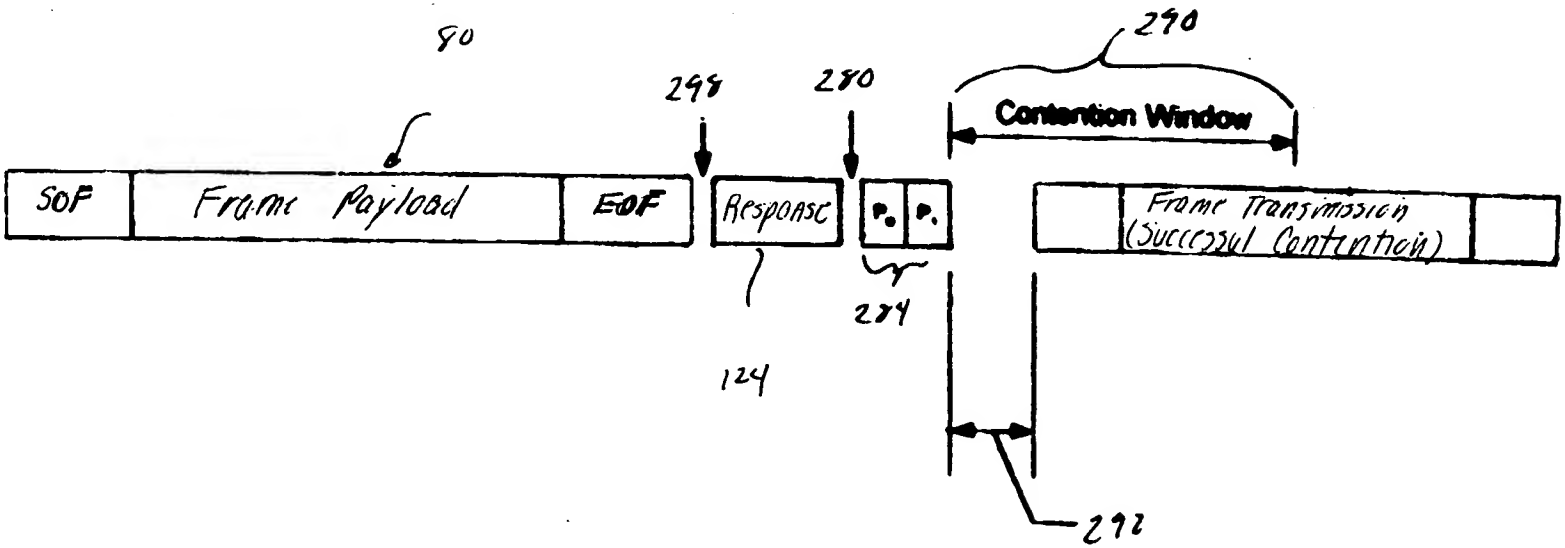


FIG. 19C

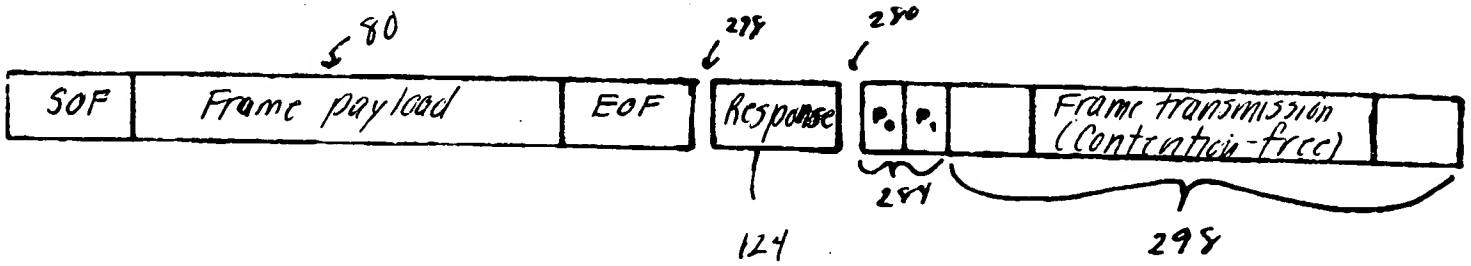


FIG. 19D

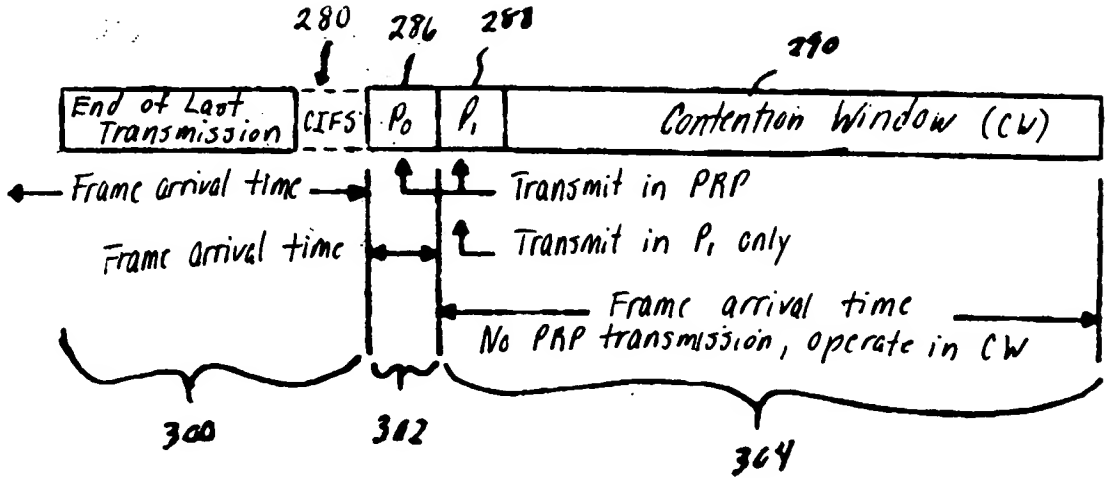

280
286
288
290
End of Last Transmission
CIFS
P_0
P_1
Contention Window (CW)
Frame arrival time
Transmit in PRP
Frame arrival time
Transmit in P_1 only
Frame arrival time
No PRP transmission, operate in CW
300
302
304

FIG. 20

00h080" 6092E960

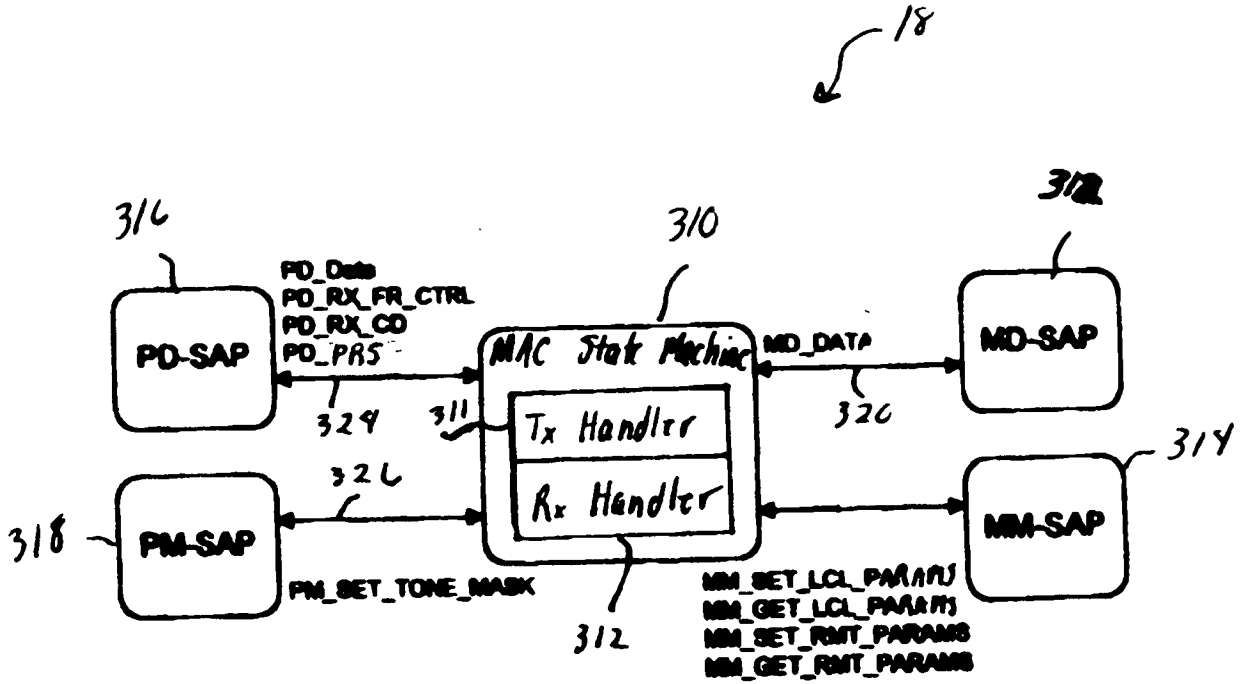


FIG. 21

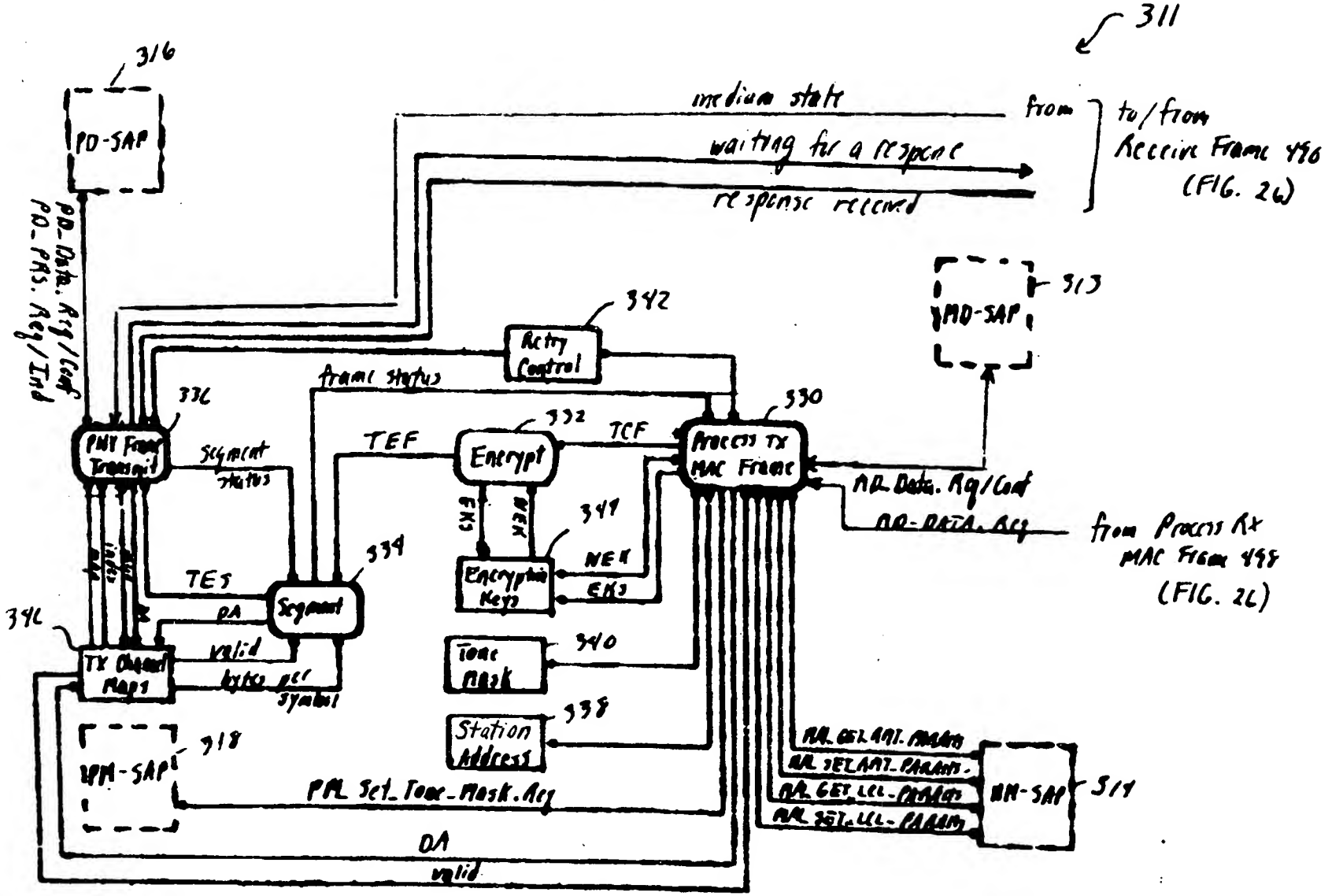

311
316
PD-SAP
PD_Data. Req/Conf
PD_PAS. Req/Ind
medium state
waiting for a response
response received
from
to/from Receive Frame 496 (FIG. 2W)
MD-SAP
313
342
Retry Control
frame status
330
332
TEF
Encrypt
TCF
Process TX MAC Frame
MA_Data. Req/Conf
MA-DATA. Req
from Process RX MAC Frame 498 (FIG. 2L)
EKS
WEK
349
WEK
EKS
Encryption Keys
334
TES
PA
valid
bytes per symbol
Segment
340
Tone Mask
338
Station Address
318
MM-SAP
PHL Set_Tone_Mask. Req
MM-SAP
319
DA
valid

FIG. 22

0054080 "60926960

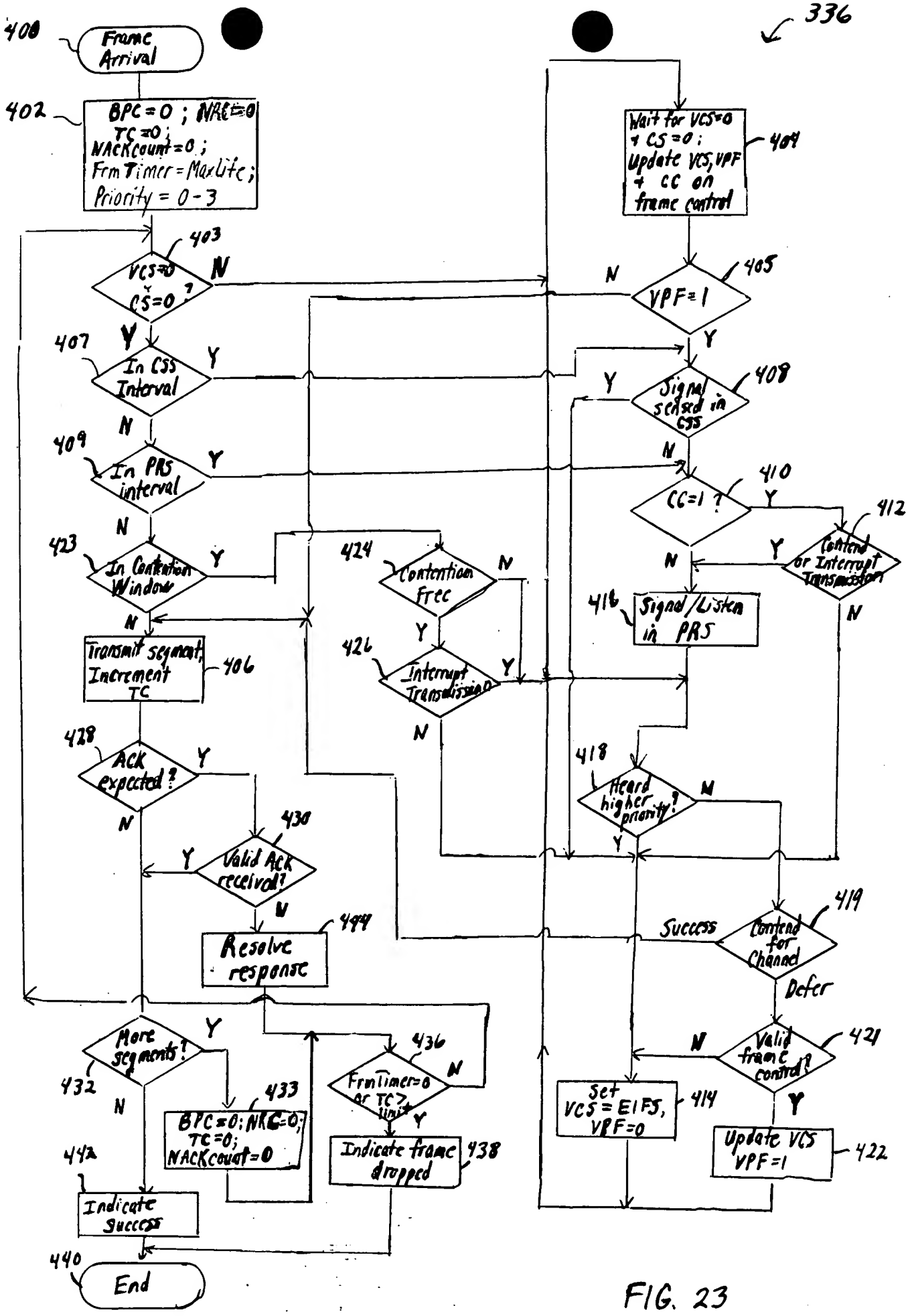


FIG. 23

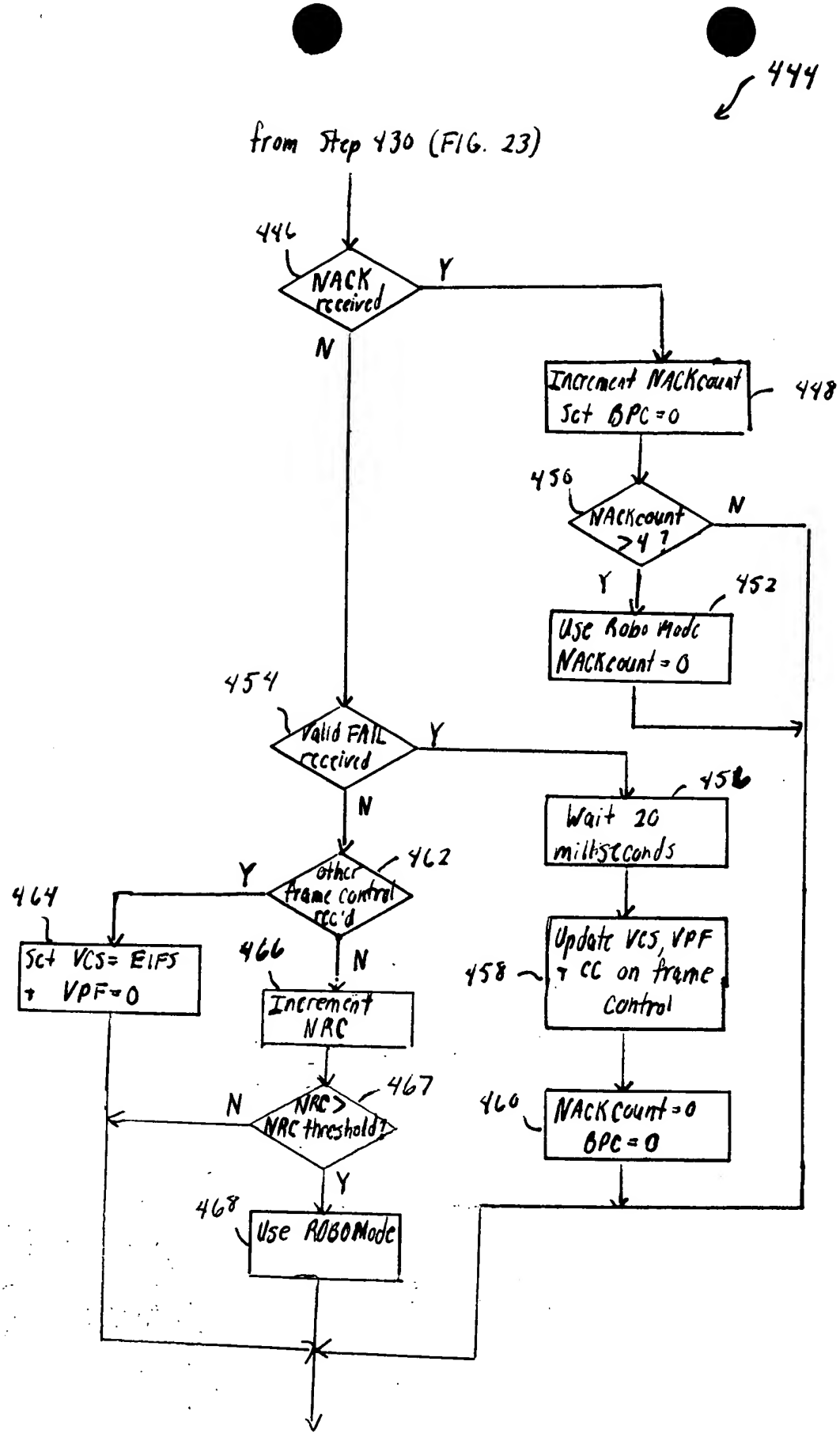

444
from Step 430 (FIG. 23)
446
NACK received
Y
N
Increment NACKcount
Set BPC = 0
448
456
NACKcount > 4 ?
N
Y
452
Use Robo Mode
NACKcount = 0
454
Valid FAIL received
Y
N
456
Wait 20 milliseconds
462
Other frame control rec'd
Y
N
464
Set VCS = EIFS
+ VPF = 0
466
Increment NRC
458
Update VCS, VPF + CC on frame control
467
NRC > NRC threshold?
N
Y
460
NACKcount = 0
BPC = 0
468
Use ROBOMode
to Step 436 (FIG. 23)

FIG. 24

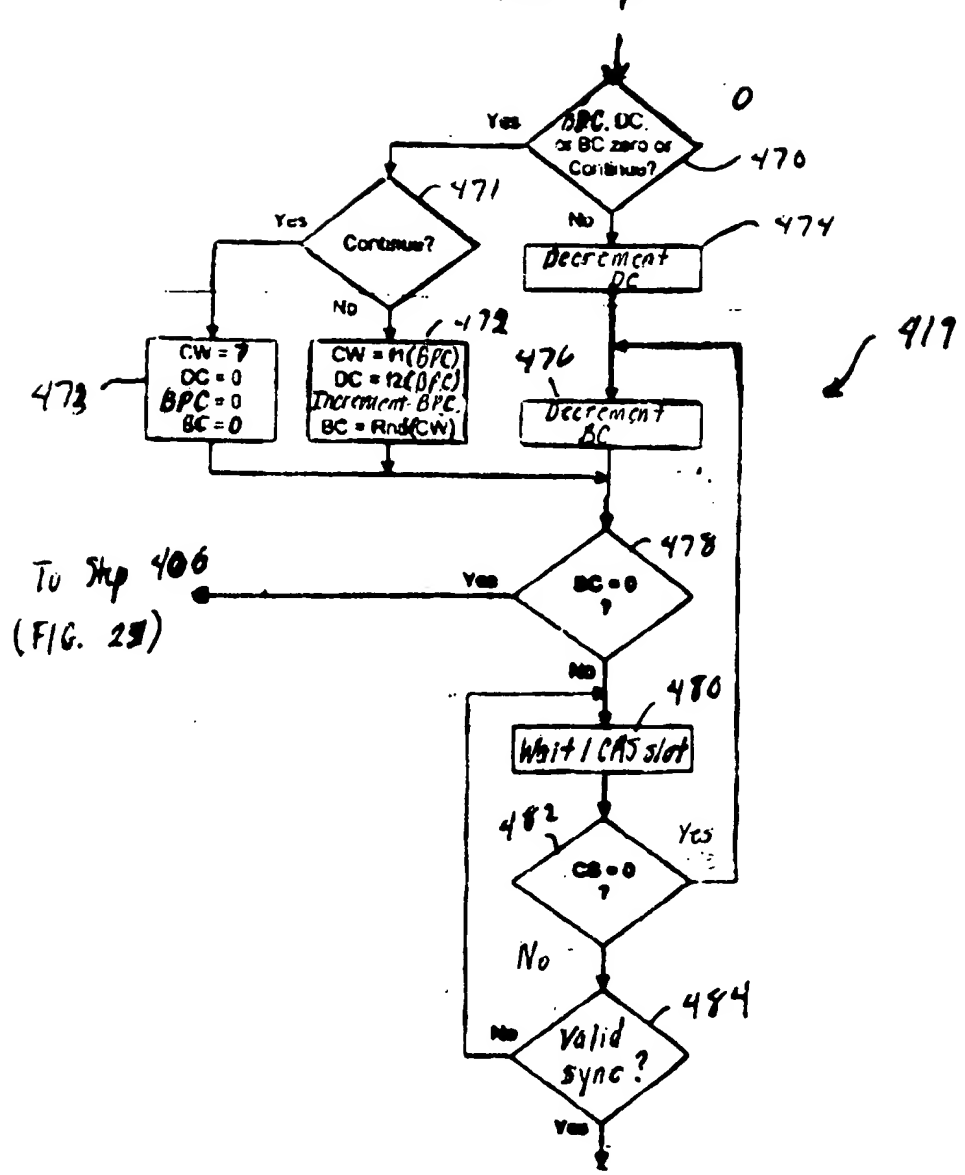


FIG. 25

0004800 - 0080509

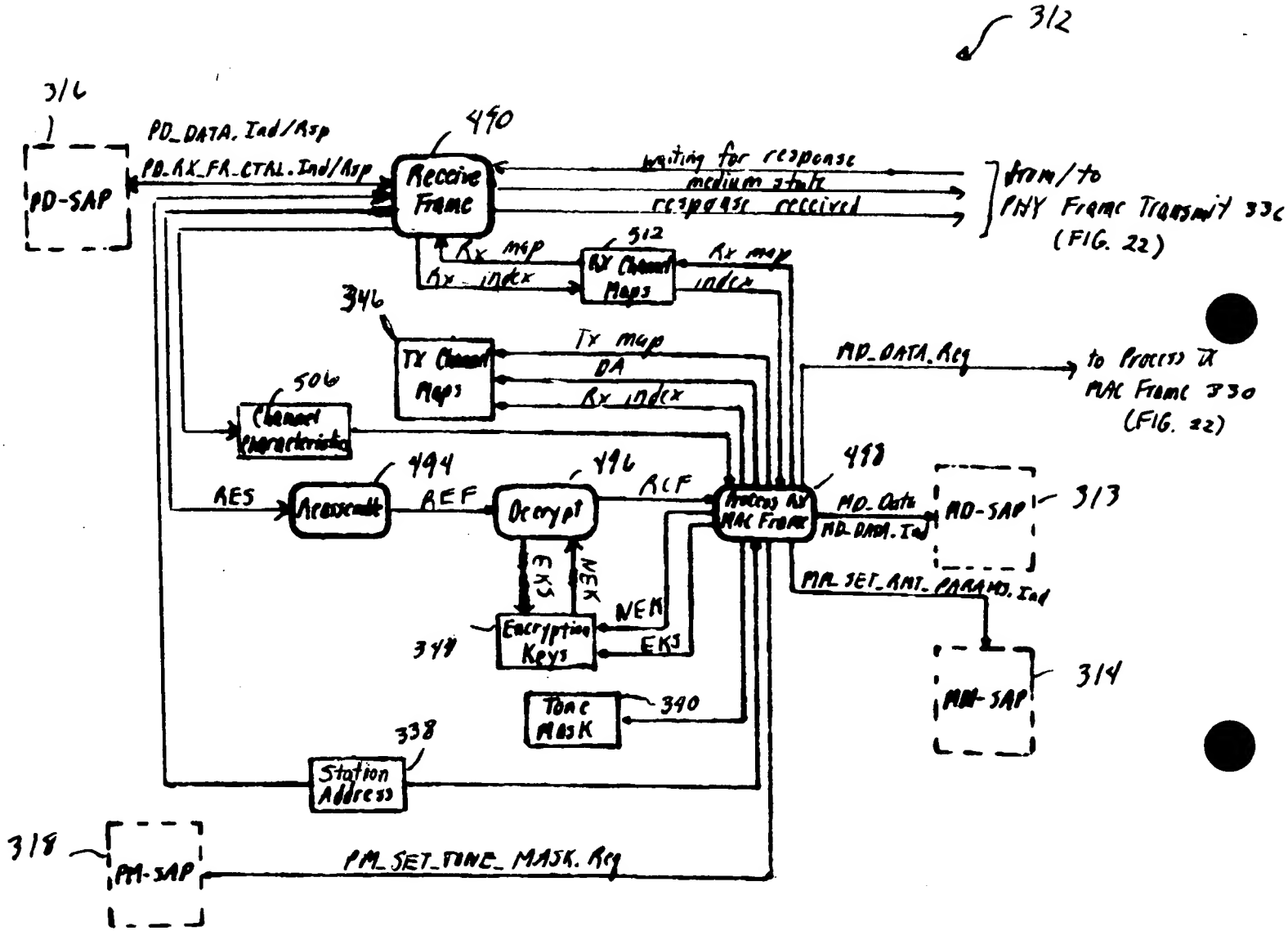

312
316
PD-SAP
PD_DATA. Ind/Rsp
PD_RX_FR_CTRL. Ind/Rsp
490
Receive Frame
waiting for response
medium state
response received
from/to PHY Frame Transmit 336 (FIG. 22)
Rx map
Rx index
512
RX Channel Maps
Rx map index
346
TX Channel Maps
Tx map
DA
Rx index
MD_DATA. Req
to Process TX MAC Frame 330 (FIG. 22)
506
Channel Characteristics
494
Accumulate
AES
REF
496
Decrypt
RCF
498
Process RX MAC Frame
MD. Data
MD_DATA. Ind
MD-SAP
313
PHY_SET_ANT_PARAMS. Ind
EKS
NEK
NEK
EKS
348
Encryption Keys
314
PHY-SAP
340
Tone Mask
338
Station Address
318
PM-SAP
PM_SET_TONE_MASK. Req

FIG. 26

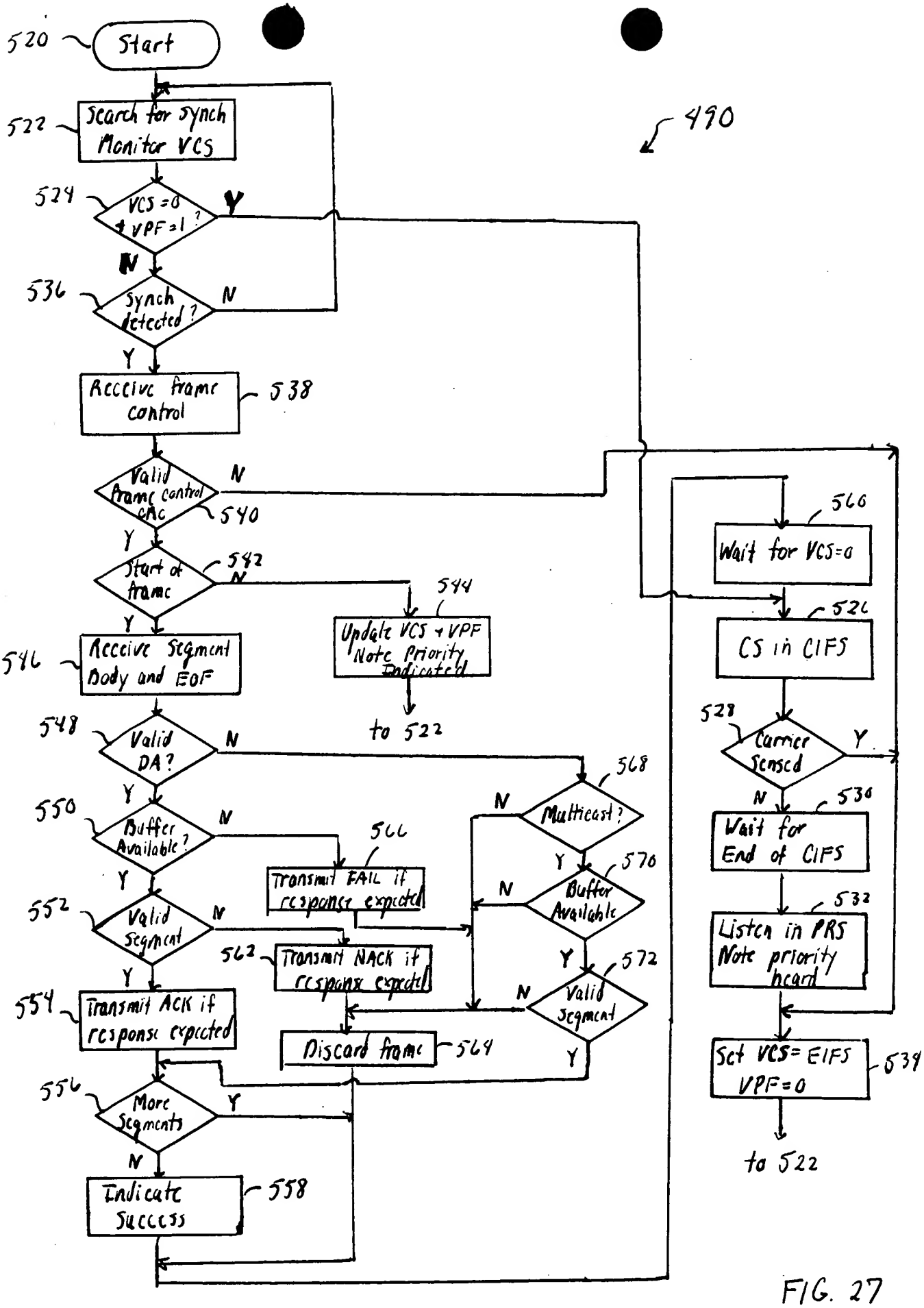

520
Start
522
Search for Synch
Monitor VCS
490
524
VCS = 0
& VPF = 1 ?
Y
N
536
Synch
detected ?
N
Y
538
Receive frame
control
Valid
frame control
CRC
N
540
Y
542
Start of
frame
N
544
Update VCS & VPF
Note Priority
Indicated
to 522
Y
546
Receive Segment
Body and EOF
548
Valid
DA ?
N
Y
550
Buffer
Available ?
N
566
Transmit FAIL if
response expected
Y
552
Valid
Segment
N
562
Transmit NACK if
response expected
Y
554
Transmit ACK if
response expected
556
More
Segments
Y
N
558
Indicate
Success
568
Multicast ?
N
Y
570
Buffer
Available
N
Y
572
Valid
Segment
N
Y
564
Discard frame
566
Wait for VCS=0
526
CS in CIFS
528
Carrier
Sensed
Y
N
530
Wait for
End of CIFS
532
Listen in PRS
Note priority
heard
534
Set VCS = EIFS
VPF = 0
to 522
0074088-000250

FIG. 27

0040030 6050350

575

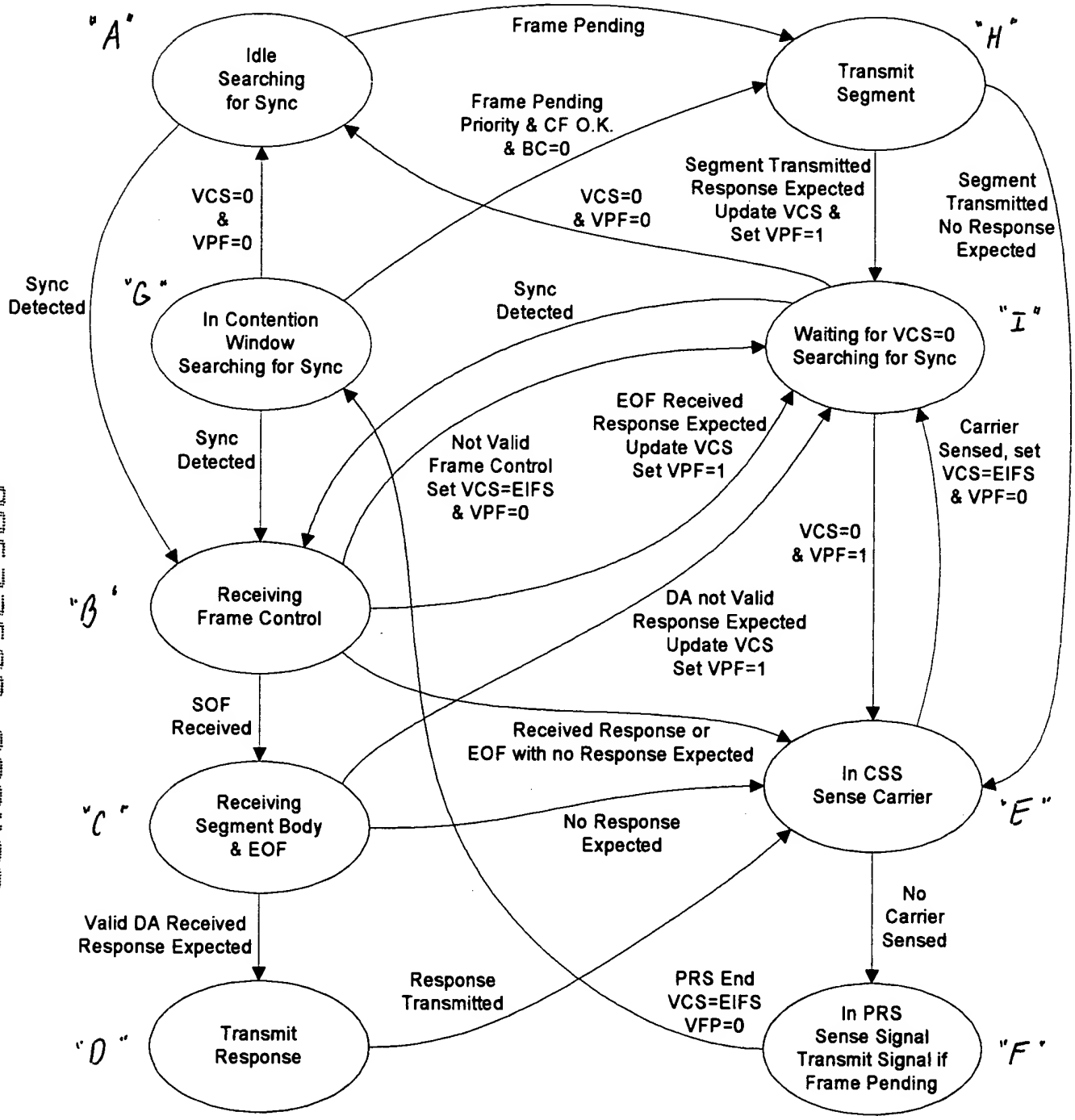


FIG. 28

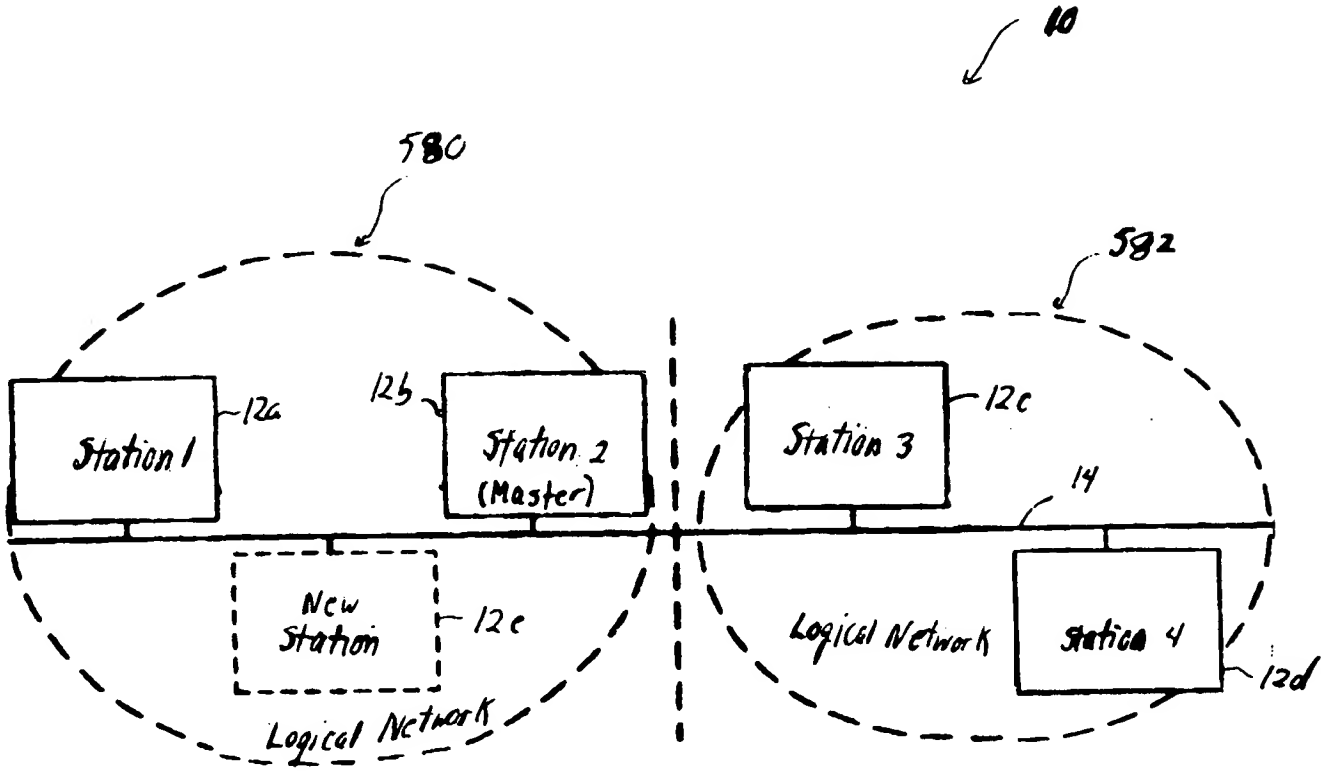

10
580
582
Station 1
12a
12b
Station 2
(Master)
Station 3
12c
14
New
Station
12c
Logical Network
Station 4
12d
Logical Network

FIG. 29

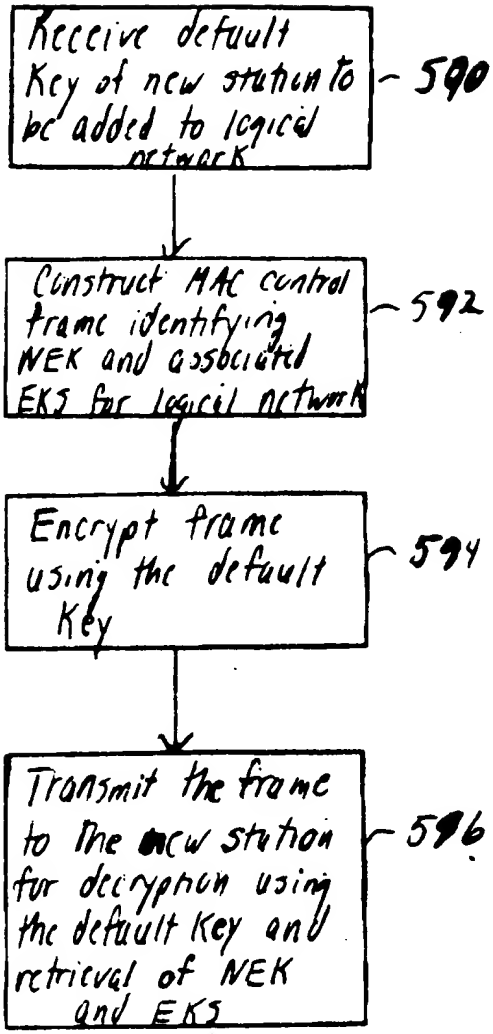


FIG. 30

0040030 · 6026296

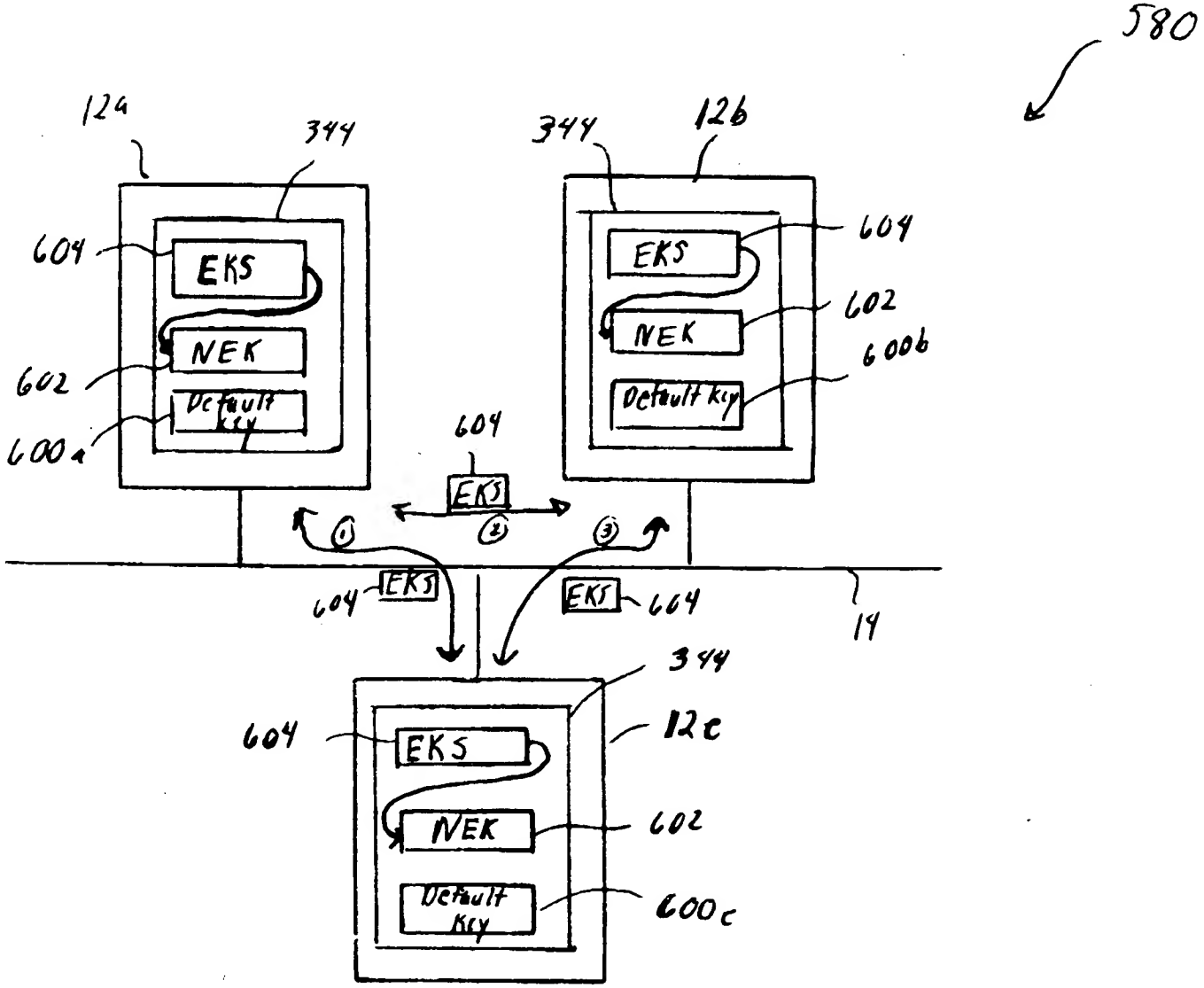

580
124
344
344
126
604
EKS
NEK
602
Default Key
600a
604
EKS
NEK
602
Default Key
600b
604
EKS
1
2
3
604
EKS
EKS
604
14
344
12c
604
EKS
NEK
602
Default Key
600c

FIG. 31

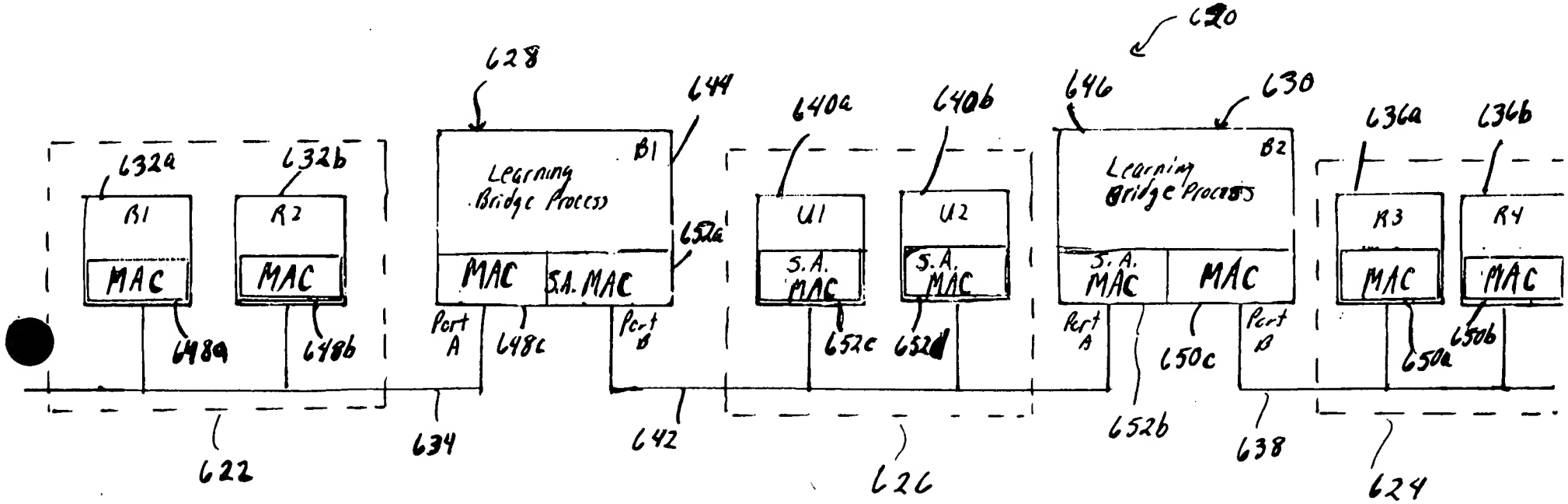

620
628
644
640a
640b
646
630
636a
636b
632a
632b
B1
Learning Bridge Process
B1
U1
U2
Learning Bridge Process
B2
R1
R2
R3
R4
MAC
MAC
MAC
S.A. MAC
S.A. MAC
S.A. MAC
MAC
MAC
MAC
652a
Port A
Port B
Port A
Port B
648a
648b
648c
652c
652d
650c
650a
650b
652b
622
634
642
626
638
624

FIG. 32

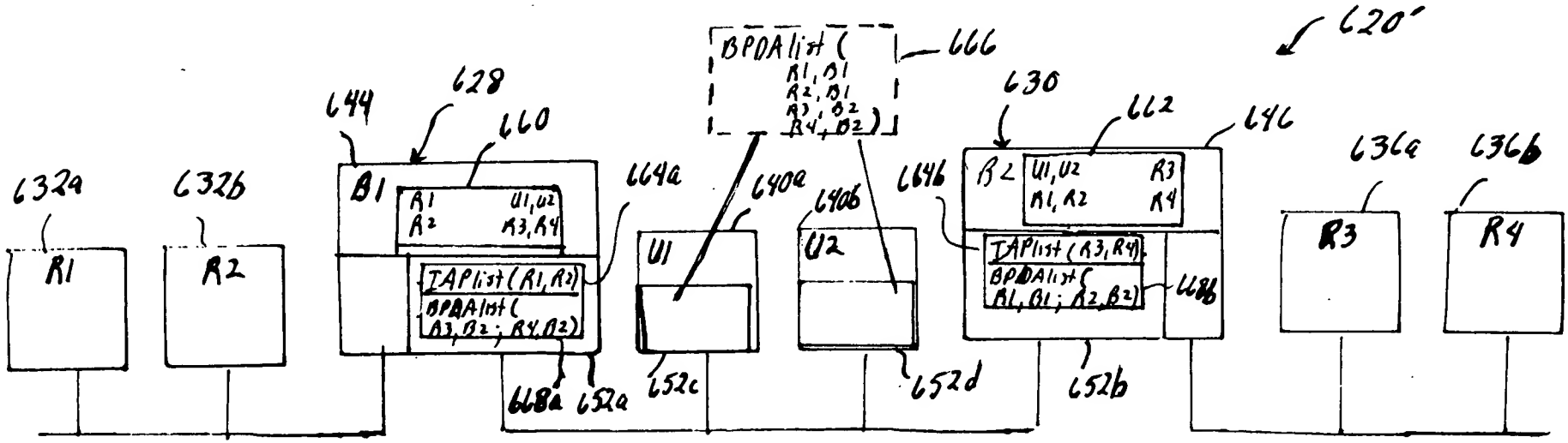

620'
BPDAlist (
R1, B1
R2, B1
R3, B2
R4, B2)
666
644
628
660
630
662
646
632a
632b
B1
A1 U1, U2
A2 R3, R4
664a
TAPlist (R1, R2)
BPDAlist (
R3, B2; R4, B2)
U1
U2
640a
640b
664b
B2
U1, U2 R3
R1, R2 R4
TAPlist (R3, R4)
BPDAlist (
R1, B1; R2, B2)
668b
R1
R2
R3
R4
636a
636b
668a
652a
652c
652d
652b

FIG. 33

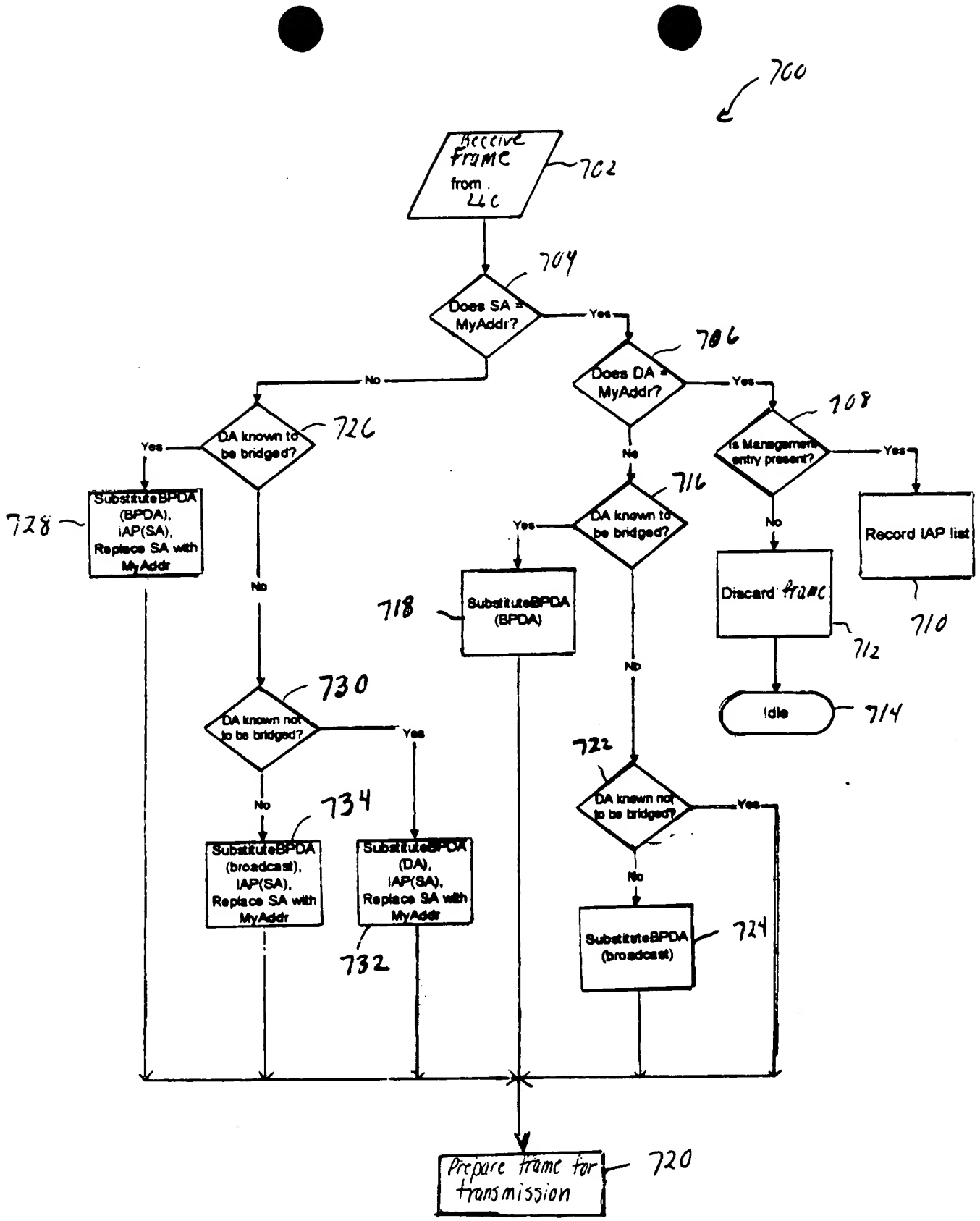

700
Receive frame from LLC
702
Does SA = MyAddr?
704
Yes
No
Does DA = MyAddr?
706
Yes
No
Is Management entry present?
708
Yes
No
Record IAP list
710
Discard frame
712
Idle
714
DA known to be bridged?
716
Yes
No
SubstituteBPDA (BPDA)
718
DA known not to be bridged?
722
Yes
No
SubstituteBPDA (broadcast)
724
DA known to be bridged?
726
Yes
No
SubstituteBPDA (BPDA), IAP(SA), Replace SA with MyAddr
728
DA known not to be bridged?
730
Yes
No
SubstituteBPDA (broadcast), IAP(SA), Replace SA with MyAddr
734
SubstituteBPDA (DA), IAP(SA), Replace SA with MyAddr
732
Prepare frame for transmission
720

FIG. 34

0040080 - 6052960

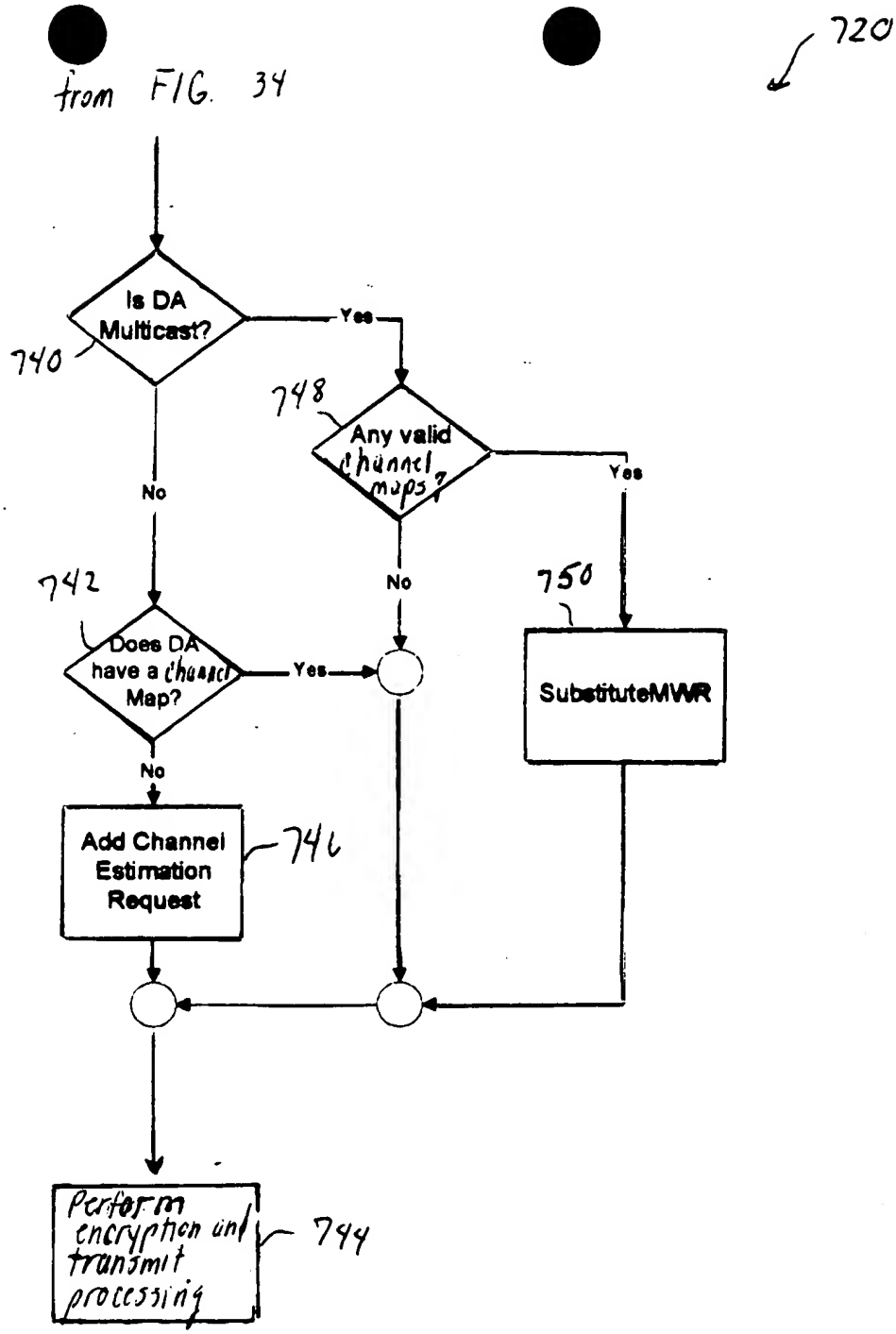


FIG. 35

0040080 - 6092303.0

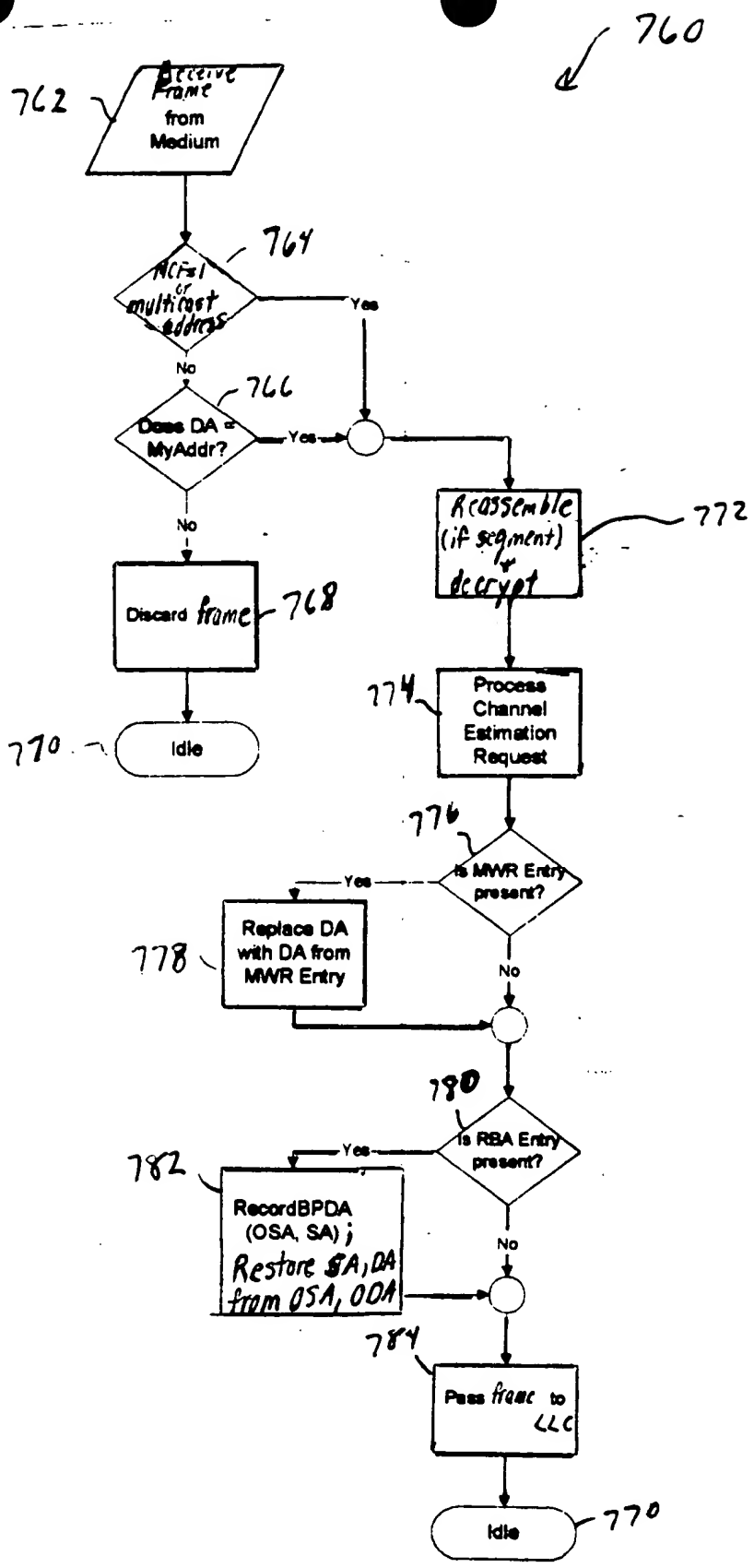


FIG. 36

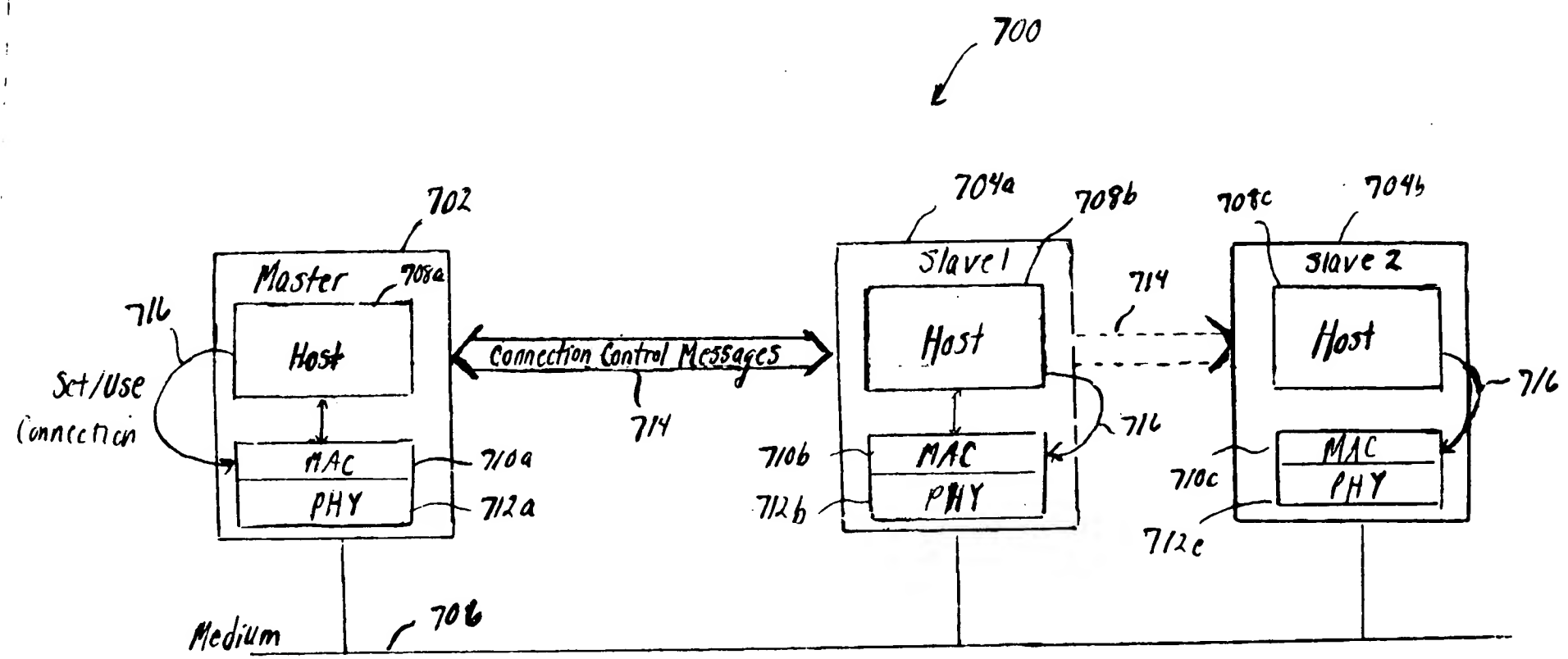

700
702
Master
708a
716
Host
Set/Use
Connection
MAC
PHY
710a
712a
Connection Control Messages
714
704a
708b
Slave 1
Host
716
710b
MAC
712b
PHY
714
708c
704b
Slave 2
Host
716
710c
MAC
PHY
712c
Medium
706

FIG. 37

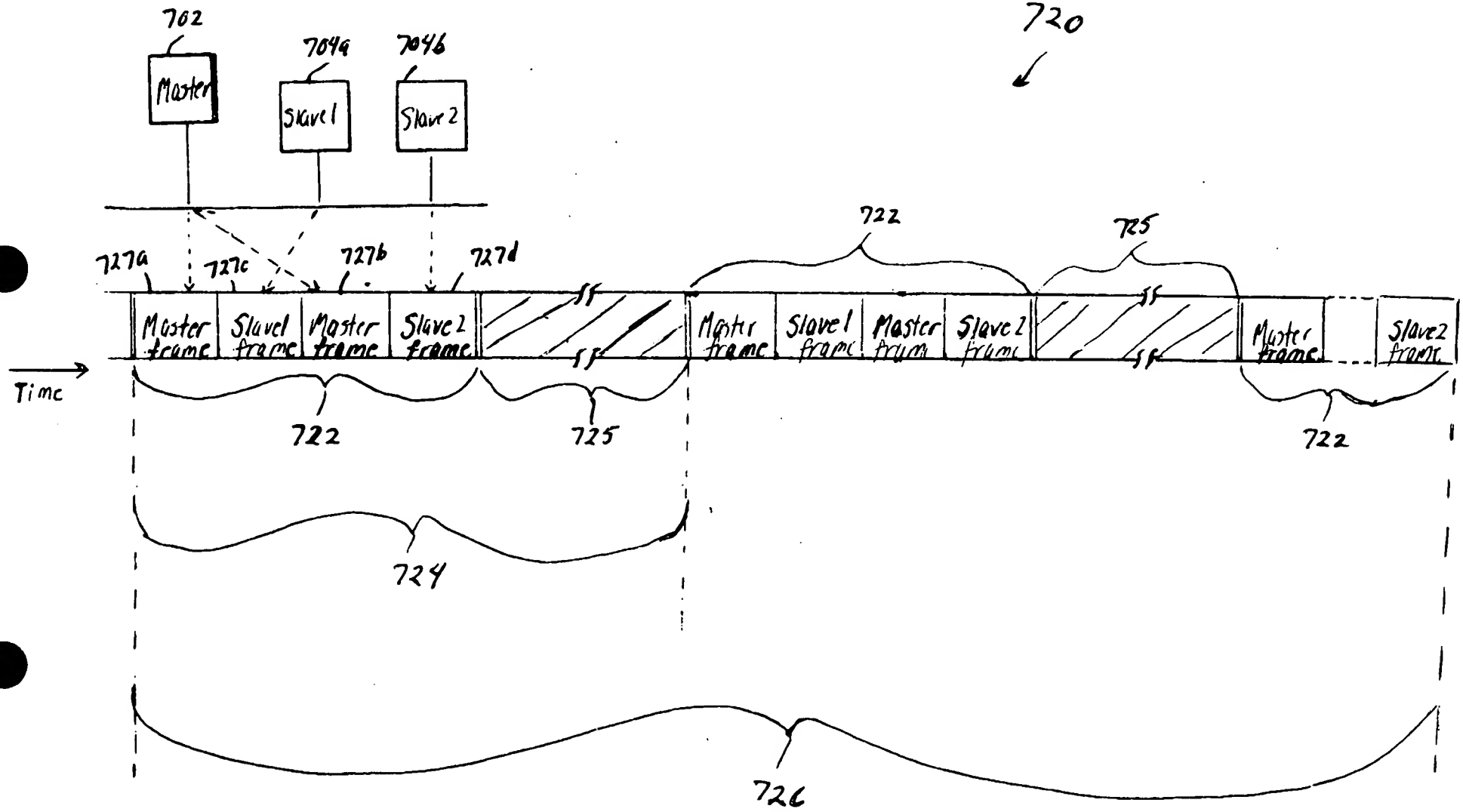


FIG. 3B

09632609 . 080400

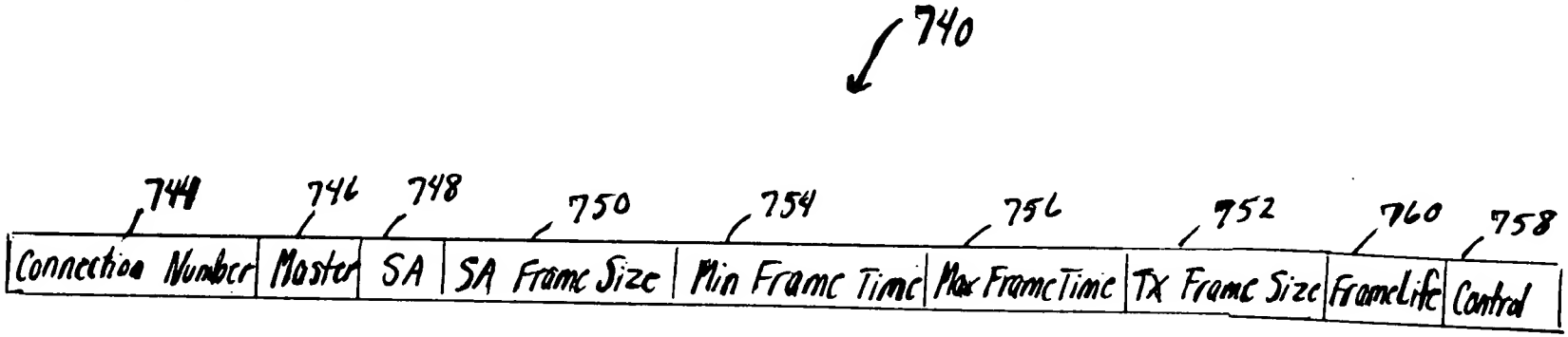


FIG. 39A

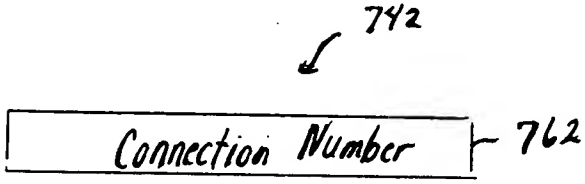


FIG. 39B

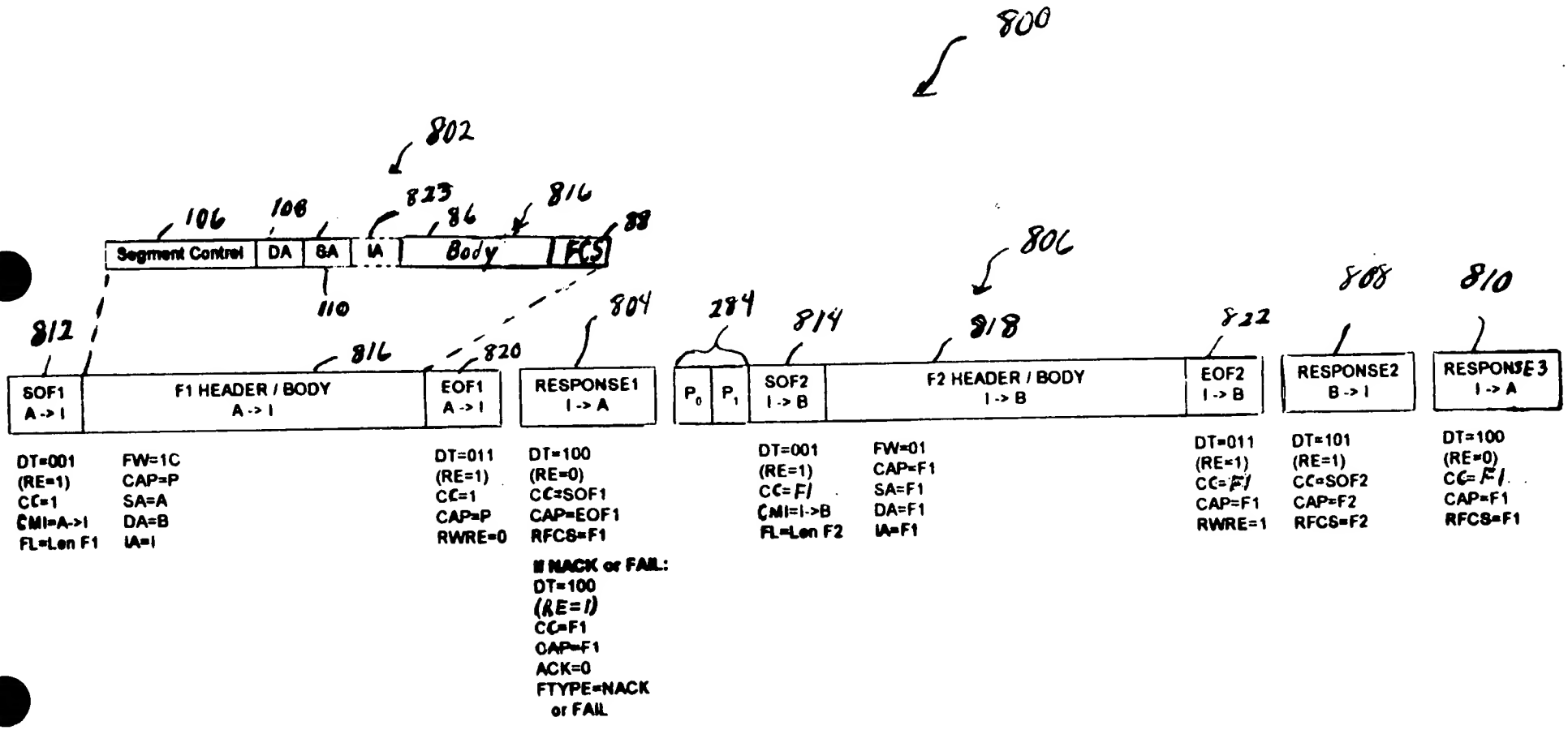

800
802
106
108
823
86
816
88
Segment Control
DA
SA
IA
Body
FCS
110
812
804
284
814
806
818
822
808
810
SOF1
A -> I
F1 HEADER / BODY
A -> I
816
EOF1
A -> I
820
RESPONSE1
I -> A
P0
P1
SOF2
I -> B
F2 HEADER / BODY
I -> B
EOF2
I -> B
RESPONSE2
B -> I
RESPONSE3
I -> A
DT=001
(RE=1)
CC=1
CMI=A->I
FL=Len F1
FW=1C
CAP=P
SA=A
DA=B
IA=I
DT=011
(RE=1)
CC=1
CAP=P
RWRE=0
DT=100
(RE=0)
CC=SOF1
CAP=EOF1
RFCS=F1
If NACK or FAIL:
DT=100
(RE=1)
CC=F1
CAP=F1
ACK=0
FTYPE=NACK
or FAIL
DT=001
(RE=1)
CC=F1
CMI=I->B
FL=Len F2
FW=01
CAP=F1
SA=F1
DA=F1
IA=F1
DT=011
(RE=1)
CC=F1
CAP=F1
RWRE=1
DT=101
(RE=1)
CC=SOF2
CAP=F2
RFCS=F2
DT=100
(RE=0)
CC=F1
CAP=F1
RFCS=F1

FIG. 40

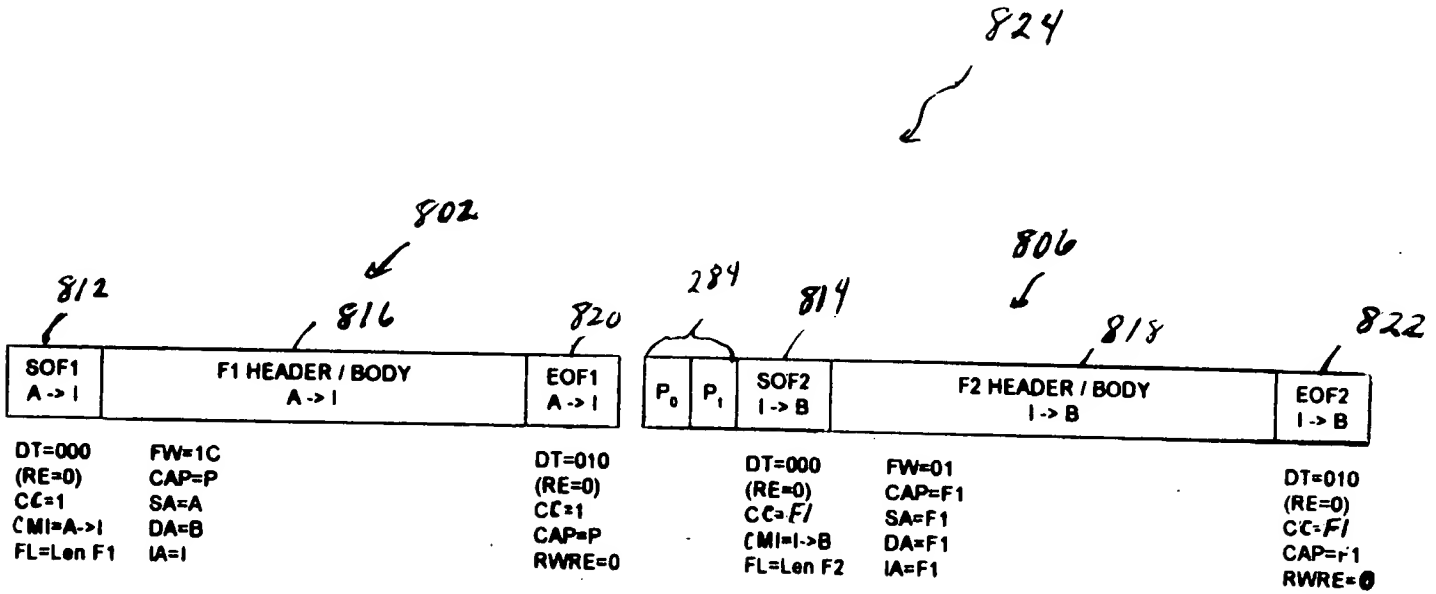

824
802
812
816
820
284
814
806
818
822
SOF1
A -> I
F1 HEADER / BODY
A -> I
EOF1
A -> I
P0
P1
SOF2
I -> B
F2 HEADER / BODY
I -> B
EOF2
I -> B
DT=000
(RE=0)
CC=1
CMI=A->I
FL=Len F1
FW=1C
CAP=P
SA=A
DA=B
IA=I
DT=010
(RE=0)
CC=1
CAP=P
RWRE=0
DT=000
(RE=0)
CC=F/
CMI=I->B
FL=Len F2
FW=01
CAP=F1
SA=F1
DA=F1
IA=F1
DT=010
(RE=0)
CC=F/
CAP=F1
RWRE=0

FIG. 41

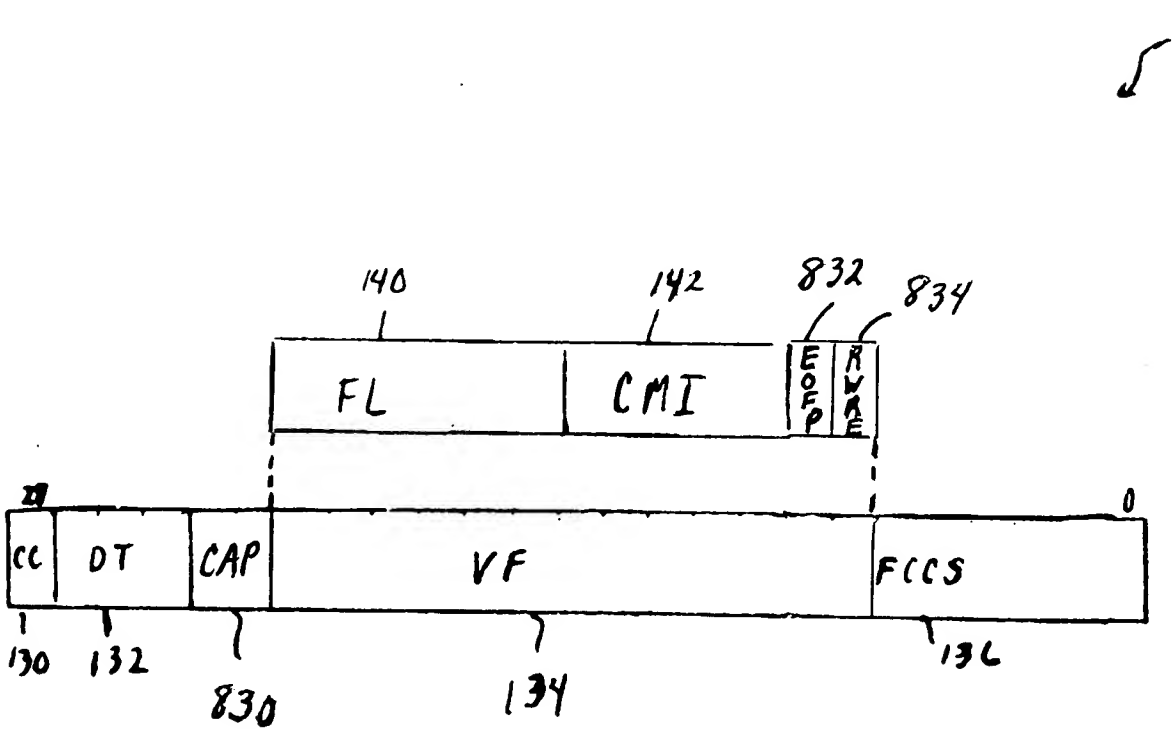

98
140
142
832
834
FL
CMI
EOFP
RVAE
CC
DT
CAP
VF
FCCS
130
132
830
134
136

FIG. 42

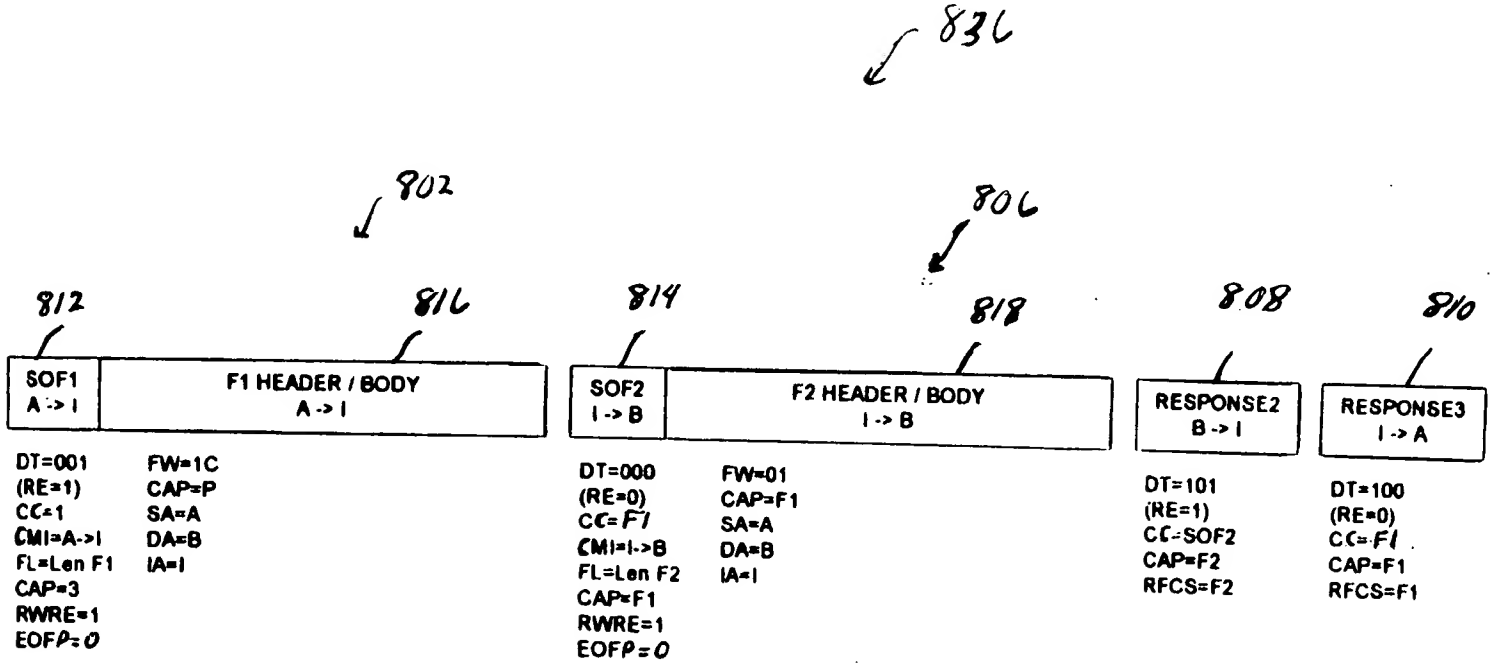

836
802
806
812
816
814
818
808
810
SOF1
A -> I
F1 HEADER / BODY
A -> I
SOF2
I -> B
F2 HEADER / BODY
I -> B
RESPONSE2
B -> I
RESPONSE3
I -> A
DT=001
(RE=1)
CC=1
CMI=A->I
FL=Len F1
CAP=3
RWRE=1
EOFP=0
FW=1C
CAP=P
SA=A
DA=B
IA=I
DT=000
(RE=0)
CC=F1
CMI=I->B
FL=Len F2
CAP=F1
RWRE=1
EOFP=0
FW=01
CAP=F1
SA=A
DA=B
IA=I
DT=101
(RE=1)
CC=SOF2
CAP=F2
RFCS=F2
DT=100
(RE=0)
CC=F1
CAP=F1
RFCS=F1

FIG. 43

838

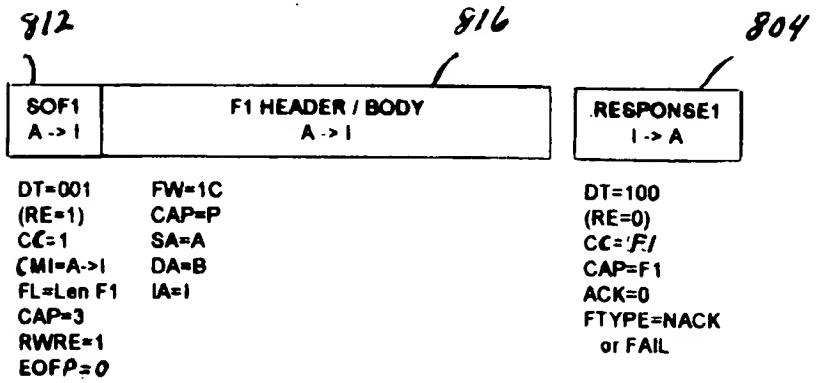
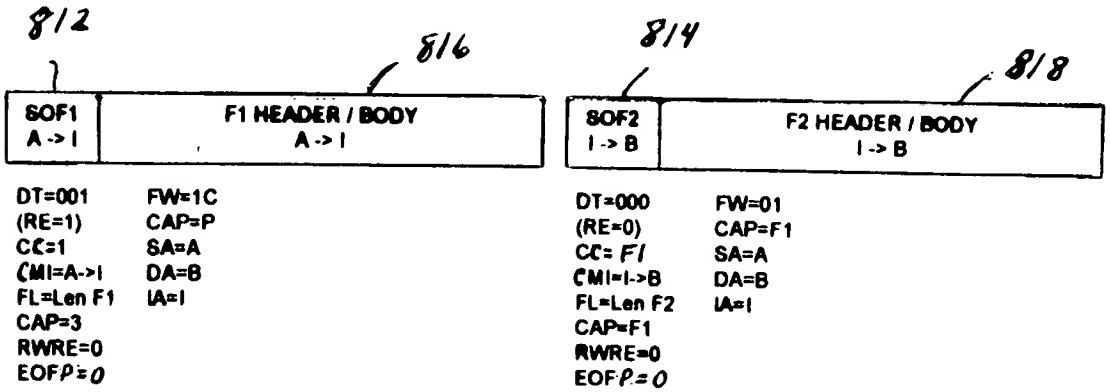


FIG. 44

840



09632609-080400

FIG. 45

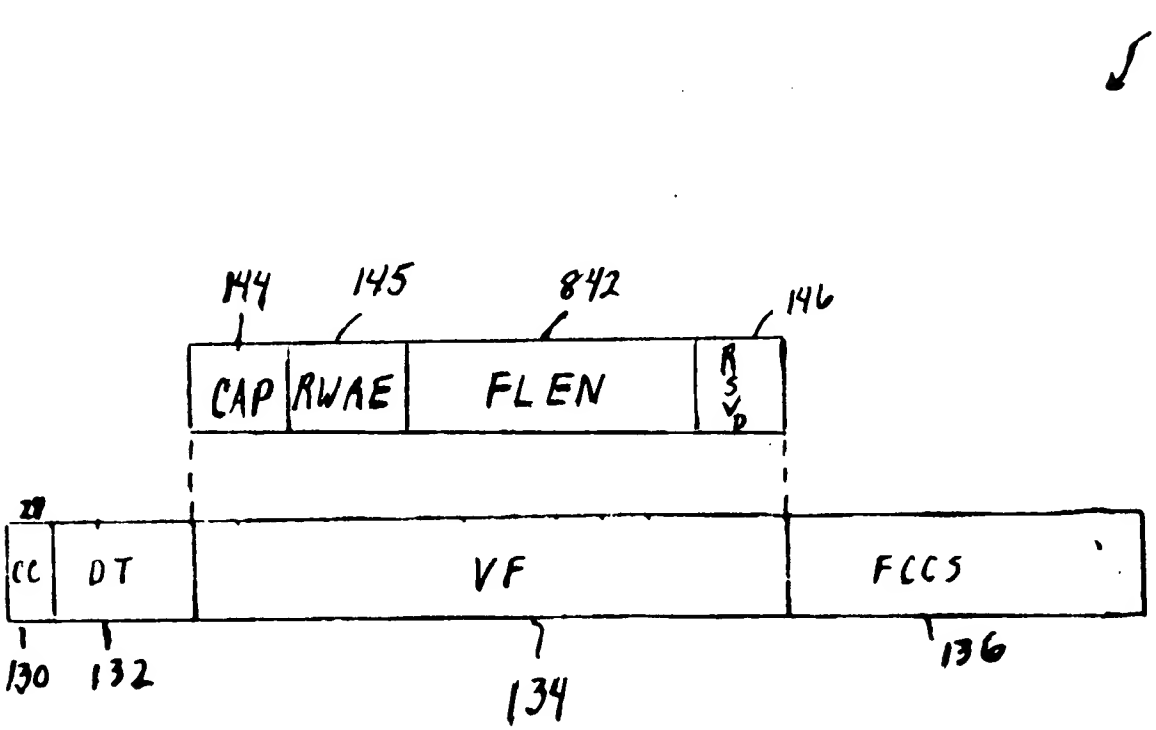

102
144
145
842
146
CAP
RWAE
FLEN
RSVD
128
CC
DT
VF
FCCS
130
132
134
136

FIG. 46